SOUNDNESS

AND

AGE OF HORSES

CAPT. M. HORACE HAYES

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SOUNDNESS AND AGE OF HORSES.

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AND

AGE OF HORSES.

A Veterinary and Legal Guide to the Examination of Horses for Soundness.

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BY

M. HORACE HAYES, M.R.C.V.S.,

LATE CAPTAIN "THE BUFFS."

AUTHOR OF "VETERINARY NOTES FOR HORSE-OWNERS," "RIDING ON THE FLAT AND ACROSS COUNTRY," "TRAINING AND HORSE-MANAGEMENT IN INDIA," ETC.

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TO

PROFESSOR G. T. BROWN, C.B.,

CHIEF OF THE AGRICULTURAL DEPARTMENT OF THE PRIVY COUNCIL,
AND LECTURER ON CATTLE PATHOLOGY AT THE
ROYAL VETERINARY COLLEGE,

IN ADMIRATION OF HIS LABOURS FOR
THE ADVANCEMENT OF VETERINARY SCIENCE IN CONNECTION
WITH AGRICULTURAL INTERESTS.

PREFACE.

My intention in writing this book, has been: (1) To define, from a strictly legal point of view, what is meant by the term, "Soundness." (2) To furnish a guide, as to procedure and detail, to the examination of horses for soundness. (3) To supply, as far as possible, references to decisions in court, on the subject, with appropriate quotations. (4) To separate those diseases, alterations of structure, and other defects that might be considered, in themselves, absolute unsoundness, from those which, from their position, or degree, may, or may not be unsoundness. In this, I have accepted judicial rulings in all instances to which I have found them apply: failing such authoritative *dicta*, I have taken the weight of veterinary opinion on the particular points. (5) I have classified under one heading, those diseases to which the law of heredity specially applies. (6) As an examination for soundness by a veterinary surgeon, always, includes the "ageing" of the animal, I have added a somewhat comprehensive chapter on the dentition of the horse,

which I compiled and illustrated from MM. Goubaux and Barrier's admirable work on *L'extérieur du cheval.*

My chief hope in offering this work to the favourable consideration of the public, is, that it may help to reconcile, to some extent, the unfortunate diversity of opinion that exists, even among veterinary surgeons, on abstract questions of soundness. The difficulties which beset the subject will, I trust, be remembered, when judging my efforts to inculcate uniformity of ideas in this direction.

I am glad to have this opportunity of thanking my friends, Mr. G. A. Banham, F.R.C.V.S., and Mr. Fred Smith, F.R.C.V.S., for their advice and friendly criticisms, when the proofs were going through the press. In saying this, I, in no way, wish to shift, on them, the responsibility of any views I have advanced.

M. H. HAYES.

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SOUNDNESS IN HORSES.

CHAPTER I.

SOUNDNESS.

Differences of opinion as to soundness—Definition of unsoundness—Practical soundness—Modifying circumstances—Duties of veterinary surgeons when examining horses—Certificates—Price—Special warranty—Vices—Blemishes.

Differences of opinion as to soundness.—The want of unanimity of opinion, even among members of the veterinary profession, as to what constitutes and what vitiates soundness, has always been a fertile cause of dispute in horse cases. Some practitioners refuse to give a certificate to that effect, unless the animal is absolutely free from any physical ailment; and, consequently, they rarely, if ever, find one that comes up to their ideal standard of perfection; while others "pass" horses which are useful of their kind, but which possess some defect or other that has been decided, over and over again, in court, to be a breach of warranty of soundness.

When an owner submits a horse for examination, he has a right to expect that the veterinary surgeon, when giving his opinion, will be guided by the principles that are recognised by legal tribunals; for it would be intolerable that any private individual should attempt to constitute himself a legislator, on a subject of such widespread importance as this is. However much we may desire to eliminate causes of dispute as to soundness, we can do so only in the matter of laying down principles; for the existence of defects, and their influence on the usefulness of an animal, are questions which, at times, cannot fail to give rise to diversity of opinion. The fact that it is impossible to define unsoundness or soundness so accurately as to exclude all chance of cavil, is of but little practical importance, so long as we can obtain a good "working" definition which shall meet our everyday requirements. I may mention that a similar objection might be made to hundreds of universally-adopted definitions, which thoroughly fulfil their purpose, although, from their nature, they are not entirely comprehensive.

Having agreed as to what unsoundness is, we may endeavour to classify the various diseases and structural defects, under two heads, namely: those which constitute absolute unsoundness, and about which, on that account, there can be no dispute; and those which cause unsoundness, only, according to circumstances. I may mention,

that, in English law, there is no such thing as a legal unsoundness; the province of the law, in this case, being limited to the establishment of the principles by which cases have to be decided. Certain defects, however, have been so frequently ruled to be unsoundness, and are so universally regarded as such, that no doubt need be entertained respecting the fact, that the possession of any of them by an animal, would render it unsound.

Definition of unsoundness.—If a horse has any disease or alteration of structure which diminishes, or is likely to diminish, his usefulness from a working point of view, or if he has any malformation which renders him less than reasonably fit for present work, such a horse is unsound.

We may see from the foregoing, that soundness is a question not of disease, but of usefulness; a fact which is in accordance with the following ruling by Mr. Baron Parke in *Kiddell* v. *Burnard.**—"If, indeed, the disease were not of a nature to impede the natural usefulness of the animal for the purpose for which he is used, as for instance, if a horse had a slight pimple on his skin, it would not amount to an unsoundness: but if such a thing as a pimple were on some part of the body where it might have that effect, as for instance, on a part which would prevent the putting a saddle or bridle on the animal, it would be different."

The first part of the definition which I have adopted, is

* Meeson & Welsby's Reports, vol. 9, p. 670.

founded on that of unsoundness by Baron Parke (*Coates* v. *Stephens*, 18th Aug., 1838),* which is as follows:—"If at the time of sale the horse has any disease which either actually does diminish the natural usefulness of the animal, so as to make him less capable of work of any description; or which, in its ordinary progress, will diminish the natural usefulness of the animal; or if the horse has, either from disease or accident, undergone any alteration of structure, that either actually does at the time, or in its ordinary effects will diminish the natural usefulness of the horse, such a horse is unsound."

A fault of conformation—"curby hocks," "turned-out toes," for instance—which does not unfit a horse for present work, however much calculated it may be to do so in the future, is not unsoundness. If, on the contrary, it interferes with its present usefulness, it is unsoundness. The following rulings will explain the point. "A defect in the form of the horse, which had not occasioned lameness at the time of sale, although it might render the animal more liable to become lame at some future time, was not a breach of the warranty" (Lord Chief Baron Abinger in *Brown* v. *Elkington*).† "The horse could not be considered unsound in law merely from badness of shape. As long as he was uninjured, he must be considered sound. When the

* Moody & Robinson's Reports, vol. 2, p. 158.

† Meeson & Welsby's Reports, vol. 8, p. 132.

injury is produced by the badness of his action, that injury constitutes unsoundness" (Mr. Baron Alderson, *Dickenson* v. *Follet*).* Respecting the case of *Holyday* v. *Morgan*,† (2nd Nov., 1858), which was an action for breach of warranty of the soundness of a horse that had the habit of shying on account of excessive convexity of the cornea, Lord Campbell, C.J., ruled as follows:—"I am of opinion that the direction of the learned Common Serjeant was wholly unexceptionable, being in effect that if the shying arose from malformation of the eye, that was unsoundness, although the defect was congenital. Although in the authorities cited, the cases of supervening disease and accident are not alone mentioned, yet it is not from thence to be assumed that the learned judges would have said that if a congenital defect had been found to exist, there would not have been a breach of the warranty of soundness, the defect being such as to prevent the animal from performing that which might be reasonably expected from him. Suppose a horse to be born blind or with a contracted foot, surely that would be a breach of warranty of soundness, although the deficiency or defect existed before the animal was foaled."‡ Wightman, J.: "If the congenital defect had merely a tendency to produce unsoundness so as not to render the

* Moody & Robinson's Reports, vol. 1, p. 299.

† Law Journal, vol. 28, Part 2, p. 9, New Series.

‡ I may remark that, when using the expression "contracted foot," his lordship, evidently referred to a foot so malformed, as to cause lameness.

animal unfit for present reasonable use, the dicta cited might apply; but here the congenital defect had actually rendered the horse unfit for the reasonable use for which a horse may be employed. An actual defect is not the less unsoundness that it has existed from the birth." Erle, J.: "I think the direction perfectly right. The animal had a defect of vision which diminished his natural usefulness at the time of sale; that, I am of opinion, was a breach of warranty; and I dissent from the proposition that no congenital defect can come within the definition of unsoundness." Hill, J.: "The true test is, whether the defect complained of renders the horse less than reasonably fit for present use; and it is immaterial, if there be such a defect, whether it be congenital or of more recent occurrence." "I have always considered that a man who buys a horse warranted sound, must be taken as buying for immediate use, and has a right to expect one capable of that use, and of being immediately put to any fair work the owner chooses." (Mr. Baron Parke in *Coates* v. *Stephens.*) *

Practical soundness.—The term, "practically sound," although it has no legal significance, may, for convenience sake, be applied to a horse which is capable of doing a fair amount of work, although he possesses one or more defects which might constitute a breach of warranty, if a warranty of soundness had been given. The defects

* Moody & Robinson's Reports, vol. 2, p. 158.

in question may be absolute unsoundnesses in themselves, or may be open to opinion on that point. Thus, if a veterinary surgeon on examining a horse, found that he had a thrush or curb, or had both of these ailments at the same time, or had a slightly enlarged fetlock joint, he might, very reasonably, state in his certificate, after mentioning the defects which he had found, that the horse was "practically sound;" supposing, that the thrush was not an aggravated one; that neither the back of the hock, nor the fetlock-joint, exhibited any symptoms of recent inflammation; and that the animal's action was unimpaired. This expression is, as we may see, a very elastic one; is entirely a matter of individual opinion; and, when applied to a horse, means that he is actually unsound, although to a modified extent. A few veterinary surgeons, who, I am glad to say, form an insignificantly small minority in the profession, use it to save themselves, even if the horse they are examining fulfils all the usual requirements; lest, perchance, he might reflect discredit on them by developing, in the future, some form of unsoundness which they, at the time, were unable to discern. I need hardly say, that if a man can find nothing in a horse that interferes, or is likely to interfere, with its usefulness, he is conscientiously bound to pass the animal sound, without making any selfish reservation; and that, if he shirks the responsibility of his position, he does not do the correct thing

in taking a fee for work he has not faithfully performed. As a rule, the more experience a practitioner has had, the broader view will he take about soundness in horses, few of which are free from some trivial defect or the other, with which, a person inclined to be hypercritical, might not find serious fault.

Modifying circumstances.—In deciding on the importance of any defect, apart from its own gravity, we should take into consideration the purpose for which the animal is intended; the work he has been doing; his age; and any signs of former treatment which he may show. Thus, a splint, in the case of a four-year-old which had evidently been idle for some time, and which was intended for fast harness work, should be regarded far more seriously than a similar one on the leg of an aged, heavy cart-horse which had been, up to the date of examination, in constant employment between the shafts.

Again, when examining a horse, if we found his feet somewhat flat, and the frogs unusually large; the fact of the hoofs having been carefully filed, with the probable view of making them appear smooth and upright, might fairly influence us in rejecting the animal, on account of his presumed liability to fever in the feet. If we also observed that he had been bled from the coronet, or jugular vein, our doubt would be still further strengthened. I may add, that roughness of the hair over the back tendons and suspensory ligament, as

indicating the application, on some previous occasion, of a blister, ought to redouble our attention to the state of the underlying structures.

Duties of veterinary surgeons when examining horses.—A veterinary surgeon, when examining a horse, should confine himself to his own province, and should be careful to refrain from volunteering his opinion as to conformation, action, suitability to the purpose required, or any other matter, about which he is not professionally concerned. The position is, of course, altered, if the employer seeks the practitioner's advice on any particular point, or puts himself entirely in his hands. I think, however, the veterinary surgeon might, with propriety, mention to his client any vices which the horse showed, while the examination was being conducted; although he would notice in his certificate, only those that might affect the animal's soundness. He would, of course, have nothing to say to such vices, as buck-jumping, jibbing, and rearing, for instance.

Certificates.—A certificate should clearly describe the horse which has been examined; should state his age, and all defects which he possesses, and which might be unsoundness; and should finally express the writer's opinion. It might, for instance, run as follows:

Address ———
Date ———

"I have examined to-day, at the request of Mr.

Blank, a brown cart mare, five years old, called Nancy, the property of Mr. Dash, of the Greyhound Hotel, Banktown, Brookshire. She is fifteen hands three inches high; has a small star on her forehead; and white girth-marks on her near side.

"She has capped hocks; and has a splint on her near fore.

"In my opinion she is sound.

"A. B. CASE, M.R.C.V.S."

If the animal possesses some defect which, of itself, constitutes unsoundness, this fact might be remarked upon, and the last two paragraphs might be merged into one, which might run as follows:

"She is five years old; has capped hocks; and has a spavin on her off hind. She is therefore unsound."

Price.—Some practitioners, erroneously, think that they ought to be stricter about giving a certificate of soundness for a horse that, if passed, would be sold for a high figure, than for one of lesser value. They have, on the contrary, nothing to do with the animal's price. In this view, I am borne out by the opinion expressed to me, by Dr. Fleming. On this point, I may quote the remarks made by Holt, on *Broennenburgh* v. *Haycock*:* "It was formerly, indeed, a current opinion, that a sound price was *per se* an implication of warranty. In other words, that a sound price given for a horse was tantamount to a

* Holt's Reports of Cases at Nisi Prius, vol. 1, p. 632.

warranty of soundness. But, when this notion came to be judicially examined, it was found to be so loose and unsatisfactory, and so much at variance with the principles of the English law in contracts of buying and selling, that Lord Mansfield (in *Stuart* v. *Wilkins**) rejected it as a popular error; and said, that there must either be an express warranty of soundness, or fraud in the seller, in order to maintain the action." See, also, *Parkinson* v. *Lee*.† If, then, price has nothing to do with soundness, the veterinary surgeon who is concerned, only, with the question of soundness, should, we may feel assured, allow no consideration of price to influence him in his decision, as to the soundness or unsoundness of the animal he is examining.

Special warranty.—"It is considered that horses with curbs may be passed as sound, on a special warranty being given, that, should the curb cause lameness within reasonable time (which time should be fixed), the seller should be responsible" (Oliphant's *Law of Horses*). With respect to the foregoing extract, I must say, that I cannot understand how the fact of the seller giving a special warranty can, with any show of reason, influence the examiner, who has nothing to do with any assertions made by the seller, or with any arrangement entered into between him and the buyer. In such a case, if it

* Douglas's Reports by Frere, vol. 1, p. 18.
† East's Reports of Cases, vol. 2, p. 314.

admitted of so doing, I venture to think that the better plan would be, for the veterinary surgeon to state, if so required, in his certificate, that the animal was unsound, solely on account of the defect in question. If the intending purchaser was then willing to take the horse, provided that he was guarded against any ill consequences resulting from this particular defect, he might accept a special warranty, to that effect, from the owner.

Vices, even those injurious to health, such as, crib-biting and wind-sucking, are held in law to be no breach of a warranty of soundness; unless they have actually produced in the animal in question, disease, or alteration of structure (see Baron Parke's ruling in *Scholefield* v. *Robb*, p. 35).

Blemishes are not unsoundness; unless they diminish, or are likely to diminish, the animal's usefulness, from a working point of view.

CHAPTER II.

DEFECTS WHICH ARE ABSOLUTE UNSOUNDNESS.

I VENTURE to put forward the following list of the best-marked and most common defects, the possession of any one of which, independently of any modifying circumstance, would render a horse unsound. I have compiled it with due regard to legal precedent, and to the general opinion of the veterinary profession, and have purposely omitted the mention of several diseases—inflammation of the brain, anthrax, lock jaw, influenza, for instance—which would, evidently, unfit the animal for work.

Asthma.

Blindness, complete, or partial.

Bog-spavin.—Oliphant, in *Law of Horses*, states that Bog-spavin is an unsoundness. In the case of *Argyll and Bute Lunacy Board* v. *Hugh Crawford* (see *Veterinarian* for 1876, page 58), the same view was taken. Hence, I think we should class this ailment as an absolute unsoundness; although, personally, I would be inclined to disregard, in an aged horse, a small bog-

spavin that was soft; free from any symptom of inflammation; did not increase in size, after exercise; and did not appear to injuriously affect, in any way, the animal's action, even when he had cooled down after severe work.

As remarked by Professor Fearnley, a bog spavin appears larger in a bent hock, than in a straight one.

Bone-spavin.—See "Spavin, bone."

Breakdown.—This term is applied by veterinary surgeons, to rupture of one or both branches of the suspensory ligament, an accident which causes more or less descent of the fetlock-joint. It is, however, popularly used to denote any violent sprain of the suspensory ligament, or back tendons.

Broken-wind.

Bursatee.—This is not an uncommon skin disease in India, and is probably due to a vegetable parasite.

Canker.

Capped elbow.—I would, in all cases, consider this an unsoundness; for however trivial it might be in itself, the enlargement would always be liable to become aggravated by the pressure of the heel, when the horse is lying down. The blemish left after the removal of a capped elbow, would not, necessarily, be an unsoundness.

Capped hock, synovial.—This somewhat unusual form of capped hock, is due to enlargement of the synovial bursa which lies between the point of the hock and the

tendon that is attached to it. "It appears as a tense fluctuating swelling, situated on both sides of the point of the hock. It is an unsoundness, causing lameness, and sometimes the formation of abscesses from caries of the summit of the os calcis" (*Williams*).

Capped knee.—Any swelling about this important joint, could hardly fail to injuriously affect the animal's usefulness.

Cataract (*Higgs* v. *Thrale*).* The slightest opacity in either the lens or capsule is an unsoundness; as it is not alone calculated to interfere with the sight, but is always liable to spread.

Cord, Scirrhous.

Cornea, undue convexity of, so as to cause shying (*see* page 5).

Corns.

Cough.—As a "cough," invariably, diminishes the natural usefulness of a horse at the time, it must, in all cases, be regarded as an unsoundness (*Coates* v. *Stephens*).† It is, also, liable to be followed by permanent impairment of the animal's "wind." A cough is not a disease in itself, but is a symptom of the existence of some irritation to the air-passages, or to the nerves which supply them. If the irritation is of such a temporary character, as to be entirely

* Cited by Oliphant in *Law of Horses.*

† Moody & Robinson's Reports, vol. 2, p. 158.

removed then and there by the act of coughing, as, for instance, in the case of a particle of dust going "the wrong way," this act of coughing should be regarded as the performance of a natural function, and not as an unsoundness. But, if the irritation remains to an extent sufficient to cause the animal to cough, more or less continuously, such a horse would be unsound; the persistence of the irritation being the cause of the unsoundness. Although the irritation, as in teething, may be a symptom of a healthy and natural process, it is not the less, on that account, detrimental to the animal's usefulness.

Curb.—This is an unsoundness, whether or not it causes lameness. Practically speaking, its existence, after the inflammation has entirely subsided, is, generally, of but little moment; except in animals which, like troop-horses, are "put on their haunches," a great deal.

Eye, diseases of the.—For instance, amaurosis, glaucoma, ophthalmia (simple and periodic), cataract, and others.

Docking, wound by.—A horse recently docked should not be passed sound until the wound has healed; for tetanus is liable to follow this operation.

Elephantiasis.—This is a result of lymphangitis.

False quarter.

Farcy.

Fistula of the parotid gland.

Fistulous withers.

Founder.—This is a common name for laminitis.

Glanders.

Grapes.—This is an aggravated form of "grease."

Grease.—Pustular eczema of the skin at the back of the pastern. "It may be defined to be an inflammation of the skin at the back of the heels and fetlocks, where vesicles and pustules form, yielding a fœtid discharge" (*Williams*).

Grogginess.—This is a common expression for navicular diseases.

Hernia.

Horn tumours (Keratoma).

Immobilité.

Jaundice.

Jugular vein, inflammation of, or blocking-up of the.

Keratoma.

Kumree.—A form of paralysis of the loins, met with in India.

Lameness.—The most temporary kind of lameness is unsoundness, as long as it lasts.

Laminitis.—Any existing inflammation in the sensitive laminæ, whether recent or of long standing, would naturally, be unsoundness. As a previous attack not alone causes weakness of the foot, but also renders it more liable to another attack, any alteration in the structure of the foot which would indicate that the horse had suffered from this disease, should be regarded as

sufficient cause for considering him unsound. The chief distinguishing signs of a previous attack of laminitis, would be: a convex condition of the sole; the existence of a large mass of imperfectly-formed horn at the toe; and the presence of the characteristic irregular rings round the wall of the hoof.

Lateral cartilages, Ossification of the.—See "Side-bones."

Lymphangitis.—Owing to the recurrent nature of this disease, a horse which is known to have had it, or which shows any signs of having had it, should not be passed sound.

Mallenders.

Mange, parasitic.

Melanosis.

Moon-blindness.—See "Ophthalmia, periodic."

Nasal gleet.

Navicular disease.

Neurotomy, effect of.—Chief Justice Best (*Best* v. *Osborne*)* ruled, with respect to an animal on which this operation had been performed, that "a horse deprived of a useful nerve was imperfect, and had not that capacity of service which is stipulated for in a warranty."

Ophthalmia, periodic.—This is a recurrent disease, which, in its ordinary course, terminates in blindness. A horse is, therefore, unsound if he is suffering from an acute attack of this disease, or if he shows signs of having

* Ryan & Moody's Reports, p. 296.

done so. During an intermission, the eye appears smaller than natural, and looks dull, weak and watery. The pupil is, generally, more contracted than usual, owing to intolerance of light. In confirmed cases, the haw is prominent; the cornea more or less opaque; and the iris changed in colour. Professor Williams justly calls attention to the peculiar wrinkled appearance which the upper lid and eyebrow assume.

Paralysis of the lips.

Paralysis of the loins.

Paralysis of the tongue.

Poll evil.

Pumiced feet (convexity of the sole). This is a result of laminitis.

Quidding is a symptom of some unsoundness which interferes with the swallowing of the food; either from inability to swallow, as in sore throat; or from want of masticating power, as in disease of the teeth. In the case of *McQuaid* v. *Farley* * (Armagh Spring Assizes, 9th March, 1849), it was ruled by Chief Baron Pigot—on appeal—that the fact of the horse turning out a quidder, on account of a broken molar tooth, was a breach of warranty of soundness.

Quittor.

Rheumatism.—If a horse has rheumatism, he would undoubtedly be unsound. But, except, perhaps, in some

* *Veterinarian* for 1849, p. 234.

cases of rheumatic disease of the hock-joint, it is difficult to prove its existence; for its presence in the horse is not characterised by any very distinctive symptoms. In doubtful cases, we might, as a rule, ascribe the unsoundness, simply, to lameness.

Ringbone.—This consists of a bony formation which involves either the pastern-joint, the coffin-joint, or both articulations. The term "*false ringbone*" is applied to a bony deposit on the long pastern bone, provided, that it does not interfere with either joint. "When very large, it may cause lameness. As a rule, however, it never gives inconvenience to the animal, and is not always to be looked upon as a cause of unsoundness. It may be compared to a splint thrown out for some beneficial purpose" (*Williams*). Such a bony formation should, I venture to say, be regarded with grave suspicion; for, in the majority of cases, it must, necessarily, be in dangerous proximity to either joint, tendon, or ligament.

Ringworm, parasitic.

Roaring.—"In practice, roaring is always very properly considered an unsoundness" (Oliphant's *Law of Horses*). I, here, assume, without the slightest fear of contradiction, that the disease, or alteration of structure, whatever it may be, of which this noise is a symptom, is an unsoundness. The following cases bear on this subject.

Bassett v. *Collis* * (14th Dec. 1810).—"Lord Ellen-

* Campbell's Reports of Cases at Nisi Prius, vol. 2, p. 523.

borough.—It has been held by very high authority [Sir James Mansfield, C.J.] that *roaring* is not necessarily unsoundness; and I entirely concur in that opinion. If the horse emits a loud noise, which is offensive to the ear, merely from a bad habit which he has contracted, or from any cause which does not interfere with his general health or muscular powers, he is still to be considered a sound horse. On the other hand, if the roaring proceeds from any disease or organic infirmity which renders him incapable of performing the usual functions of a horse, then it does constitute unsoundness." Practically speaking, the distinction made by His Lordship, is of no importance; for what is understood as roaring, or whistling, is not due to any bad habit, and does, in all cases, interfere with the animal's muscular powers; and, very frequently, with his general health.

Onslow v. *Eames* * (23rd May, 1817).—"Lord Ellenborough.—If a horse be affected by any malady which renders him less serviceable for a permanency, I have no doubt that it is an unsoundness. I do not go by the noise, but by the disorder."

Batty v. *Seal* † (Hartlepool County Court, 2nd Nov. 1877, before E. J. Meynell, Esq., Judge).—The plaintiff sued the defendant for the balance of the price of a horse, which was sold as sound in wind and limb. Subse-

* Starkie's Reports of Cases at Nisi Prius, vol. 2, p. 81.

† *Veterinarian* for 1877, p. 881.

quently, the animal was found to be a roarer, "but a good worker." He also had stringhalt, which the defendant was supposed to have seen at the time of sale. "*His Honour* said that roaring would not affect a warranty, unless it affected a horse's pulling powers, and the stringhalt was palpable; he therefore found for the amount claimed, less the sum paid into Court." The losing side, here, seems to have been strangely negligent in not proving that, although the roarer was a good worker, he would have been a still better puller than he was, had he been free from the defect in question.

Thomas v. *Young*.*—In this case, roaring was held to be an unsoundness, and the jury immediately found for the plaintiff, who had, on a warranty of soundness, bought a horse that he, subsequently, found out was a roarer.

In *Vallance* v. *Brook*† (Windsor County Court, Dec. 1850), the Judge, in summing up, stated that "roaring was an unsoundness in law."

Sallenders.

Sandcrack.—"If a horse without any indication of having previously had the disease, throw out a sandcrack immediately after sale, it is no breach of warranty" (Oliphant's *Law of Horses*). I believe I am correct in saying that, as a rule, a sandcrack occurs only in horn which has been secreted under conditions of malnutrition,

* *Veterinarian* for 1877, p. 668.

† *Do.* for 1851, p. 82.

and which is, consequently, abnormally liable to injury from force impressed on it. Although, in this case, the weakening process would have extended over a more or less prolonged period; still, the fact that a perfectly sound hoof may, at any time, "spring" a sandcrack by some excessive strain being applied to it, shows that the opinion just quoted is thoroughly reasonable. I may mention that some horses have, naturally, such weak feet, that they are very liable to throw out sandcracks, even under every favourable condition of health and work.

Scirrhous cord.

Seedy-toe.—I think that seedy-toe, whether, or not, it indicated a previous attack of laminitis, should be regarded as an unsoundness.

Sesamoiditis.

Short sight.—So as to produce shying (*see* page 5); or to interfere with the proper performance of the animal's work.

Shoulders, wasted.—"Some dealers have no objection to horses with wasted shoulders if they go sound, as it is well known that they will perform their work well enough if not put to the plough. Notwithstanding this, I hold that it is an unsoundness in law, and that it always depreciates the animal's value. I have seen many young carriage-horses suffer from this form of unsoundness, resulting from working in the plough; but I cannot

recollect one instance where they were rendered permanently unfit for carriage work" (*Williams*). Animals thus affected, if free from lameness, might be certified as "practically sound."

Side-bones.—This disease (in *Simpson* v. *Potts* *) has been decided to be an unsoundness; but I must add that the mare in question was actually lame on that account. In *Hussey* v. *Coleman* † (Salisbury County Court, 23rd Feb., 1859), which was for breach of warranty given with a mare that was, subsequently, found to have side-bones, *His Honour*, when putting the case before the jury, said: "If at the time of sale there were the seeds of disease in this mare—if the membranes were affected—if the cartilage was partly ossified, even though it could not be seen, it would be enough for the plaintiff's case, and would be a breach of warranty on the part of the defendant." The jury returned a verdict for the plaintiff. Professor Williams, as we may see from the following extract from his *Veterinary Surgery*, is of opinion that it should not always be regarded as unsoundness. "Side-bones are a cause of unsoundness, but all horses so affected should not be condemned on this account; and it may be laid down as a general rule, that if the feet are strong, open, and well-developed, the horse showing no lameness should not be condemned for side-bones. But,

* Oliphant's *Law of Horses.*

† *Veterinarian* for 1859, p. 291.

if he is stilty in his action, even without actual lameness, or if the feet be contracted, altered in form, weak in the heels, flat or convex in the sole, there should be no hesitation in pronouncing him unsound .... It will be useful to bear in mind that when these cartilages are ossified, the horse's gait will lose that elasticity which is so essential to good action. In the cart-horse this is not of much consequence, but in the horse required for other paces than the walk, it is of the greatest importance, not only as a question of soundness or unsoundness, but of the usefulness of the horse and safety of the rider or driver." With all due deference to the great authority whom I have just quoted, I venture to think, that the fact of this disease injuriously affecting "that elasticity which is so essential to good action," would always have the effect of rendering it an unsoundness in the eyes of the law. A cart-horse suffering from it might be passed as "practically sound," provided, he was not lame. I may remark that side-bones, being a consequence of concussion, are much less serious when in the hind feet, than when in the fore.

Sole, weak.—When this condition is a result of disease, it is an unsoundness; but when it is a congenital defect, not causing lameness, it is not so. "Mere defective formation, however, not producing lameness at the time of sale, is not, in my opinion, unsoundness." (*Mr. Justice Cresswell* in *Bailey* v. *Forrest.**)

* Carrington and Kirwan's Reports, vol. 2, p. 131.

Spavin, bone.—The fact that it is impossible to draw a sharp line of demarcation between a "coarse hock" and one with a spavin, renders the subject of spavin a fertile cause of dispute. Following the opinion held by such eminent authorities as Dick, Percivall, Williams, and Barlow, among others, I think I may safely say that, if both hocks are alike; the action perfect; and the power of bending the joints unimpaired, a horse with coarse hocks should be passed as sound. "Amongst the variety of hocks that a veterinary surgeon examines, what is termed a 'coarse hock' is often seen. By this term is meant a hock with well-developed cuneiform bones, giving a prominence to the articulation, very much resembling spavin; and it is generally borne out by experience that such hocks are superior to those of a finer description, standing more wear and tear, and remaining sound. It was laid down as a rule by the late Mr. Barlow, that if both hocks were alike, and the action good, joints coarsely formed should not be condemned as unsound, more particularly if the enlargements were situated towards their posterior aspect," (*Williams*). I may mention that spavin lameness is far more intractable in old horses, than in young ones. A bone spavin (*Watson* v. *Denton**) is always an unsoundness; although the fact of its existence may, very naturally, be a subject of dispute.

Sprain of the back tendons, suspensory ligament, or check

* Carrington and Payne's Reports, vol. 7, p. 85.

ligament; or alteration of structure in these parts due to sprain.—The alteration, in almost all these cases, will be manifested by thickening, lengthening, or shortening of the affected part. No distinction should be made as regards the question of soundness, between sprain of a tendon, and sprain of its sheath.

Stringhalt.—This is an unsoundness (*Thompson* v. *Patteson**), on account of its always giving rise to lameness. In *Anderton* v. *Wright* † (Wigan County Court, 1871), "His Honour said that it was perfectly clear that *stringhalt* constituted unsoundness." Stringhalt, generally, tends to get worse with age.

Thick wind.—(*Atkinson* v. *Horridge.*‡)

Thoroughpin.—Thoroughpin is a distended condition of the synovial sheath of the tendon of the *flexor pedis perforans* muscle of one of the hind limbs. It may be due to disease or injury of the tendon, in which case it would be a grave defect; or to a very abundant supply of synovia, without any signs of inflammatory action having taken place. In the latter instance, a thoroughpin might be regarded as of little consequence, provided that it was small, did not in any way affect the action, and that the horse was at least seven years old. If the hocks have been subjected to a good deal of work, it is

* Oliphant's *Law of Horses.*

† *Veterinarian* for 1871, p. 522.

‡ Oliphant's *Law of Horses.*

only reasonable to expect that the synovial sheathes will have secreted a large supply of lubricating fluid; and that, if the *os calcis* is short, any fulness of the sheath of the *perforans* tendon will become all the more apparent. A large bog-spavin may give rise to the appearance of thoroughpin, by the fact of its pushing the synovial bursa of the tendon up out of its place. In this case, the bog-spavin, and not the thoroughpin, should be judged as to the probable effect on the animal's usefulness. Young horses, from weakness of the joints, often show bog-spavins and thoroughpins which may go away in time. The existence of such ailments, in their case, should, I think, be regarded with suspicion; for joints thus affected cannot be considered to be capable of a reasonable amount of immediate work. If, however, the animal is too young for saddle or harness, his defects should, naturally, be estimated on the same footing as if he had been broken in. We may take the foregoing remarks on thoroughpin in conjunction with those made on bog-spavin (*see* page 13); as both affections are of the same nature, and are closely connected with each other.

Thrush.—In *Barrett* v. *Preece** (Shrewsbury County Court), it was decided that the fact of a horse which was warranted sound, having thrush, was a breach of the warranty.

* *Veterinarian* for 1858, p. 235.

Unnerving.—See "Neurotomy."

Villitis.

Weed.—See "Lymphangitis."

Whistling, or other abnormal sounds, which indicate diminution of the calibre of the air passages.

Windstroke.—(Paralysis of the loins).

Withers, fistulous.

Worm in the eye.—This disease is usually met with, only, in India. After the removal by operation, or disappearance of the "worm," the eye may recover its soundness; provided, if the cornea has been punctured, that the resulting scar does not interfere with the sight.

CHAPTER III.

DEFECTS WHICH ARE NOT NECESSARILY UNSOUNDNESS.

THE following defects, unless where specially excepted, may, or may not be unsoundness, according to circumstances; such as: their nature and position, the age of the animal, and the nature of the work demanded of it.

Anterior iliac spine, fracture of.—See "Dropped Hip," page 39.

Broken knees.—This term is applied to any mark left by a wound on the front of the knee. From a legal point of view, this accident, after the wound has healed, is, or is not an unsoundness, according to the degree of injury inflicted. Although the slightest mark on the knee, as a rule, seriously detracts from a horse's market value; still the accident may not affect in any way his usefulness. If this be so, the exigencies of the case will be fully met, by the fact of the blemish being mentioned in the certificate. As regards the question of soundness, it does not matter a great deal how the horse got

"marked;" for it is quite possible for an animal to fall down in the middle of a road, from no fault of his own. If we had positive proof that the injury was not caused by a fall, we might regard it with less suspicion, than we might otherwise do; for it is incontestable that a horse which has once been "down," is more liable to stumble, than one whose knees have never come in contact with the hard road. Although it would be idle to attempt to gainsay the fact, that a blow inflicted on an important joint, like the knee, has a great tendency to be followed by weakness of the structures of the part; still, if after an exhaustive trial, we can detect no indication of the existence of such weakness, or of any other inability, it would be manifestly unfair to reject a horse that had suffered from an injury which might have had, but which did not have, an injurious result. I need hardly say, that a veterinary surgeon can scarcely be too careful about giving a certificate of soundness for a horse with broken knees: at the same time, he should not attempt to shield himself, at the expense of the owner, from the possibility of making a mistake. Practically speaking, we shall find that only the slighter cases of "broken knees" should be passed. Both Dr. Fleming and Professor Williams agree that the mere fact of a horse having blemished knees, is not sufficient to have him condemned as unsound.

Brushing.—See "Cutting."

Capped hock.—The form of capped hock which consists of a serous sac at the point of the hock, "is not an unsoundness, if not causing lameness, and arises generally from the horse striking the point of his hock against some hard substance. It very often indicates a kicker, either in harness or in the stable, is unsightly when large, and depreciates the value of the animal" (*Williams*). I would add, that the enlargement, so as not to be an unsoundness, should be small, and should present no symptons, whatsoever, of inflammation. Such a capped hock never interferes with the usefulness of a horse.

Chapped heels.—See "Cracked heels."

Contraction of the foot.—The term, "contracted foot," is applied to a hoof which is narrower than natural, from side to side, in comparison to its length. If the contraction is at the heels, the horse is said to have "contracted heels." If the foot is of the proper form, but is smaller than its fellow, the animal has what is, usually, called "odd" feet. If both feet are smaller than what is usual to meet with in horses of the size of the animal in question, the term "small," instead of "contracted," should be used with reference to them. A horse may have naturally narrow feet—like those of a mule—which should not be regarded as a sign of unsoundness; provided always, that the animal goes true and level, and shows no signs of disease. The same remark

will apply to naturally small feet which are of the same size. If one foot be, from birth, smaller than its fellow, or if it has become so from disuse during early youth, the animal, notwithstanding this defect, will be sound, if the defect in question neither diminishes his usefulness, nor is likely to diminish his usefulness. This point will, of course, have to be determined by careful trial and observation. Contraction of the foot, as a diseased condition, is usually the result of navicular disease, which, almost always, causes the horse to go "upon his toe," and, consequently, throws the structures in rear more or less out of work. Formerly, contraction was erroneously looked upon as a cause, and not as result, of unsoundness. "Contracted heels" are, chiefly, brought on by the horse going on his toe; by allowing the heels to grow too long; by improper shoeing; and by the practice of cutting away the bars and frog. We find thrush frequently associated with contracted heels. I need hardly say, that the veterinary surgeon would be extremely chary of giving a certificate of soundness to an animal with "odd" or contracted feet.

Cornea, specks on the.—The cornea is not very unfrequently wounded by accident. The scar is at first of a bluish colour, but subsequently turns white; a fact which may afford some clue to the length of time that has elapsed since the wound was inflicted. I may

mention that the cornea has to be punctured in the operation for "worm in the eye." "The opacities are, only when sufficiently large, or when so situated as to interfere with sight, to be regarded as causes of unsoundness." (*Williams.*)

Cracked heels (chronic erythema).—As regards the question of soundness, it matters little that we are unable to draw a sharp line of distinction between this disease, and "grease;" for any case of the former which might be classed as one of the latter, would be an undoubted unsoundness. Although a slight roughness, or a few scabs at the back of the pastern or pasterns, as the case may be, might be passed over; still, if the general surface of the skin of the part be inflamed, even without being broken, the horse should be regarded as unsound; for such a condition is often difficult to remove, and may give rise to a great deal of inconvenience to the affected animal. In old-standing cases, the fissures in the skin may, apparently, heal up all right; but as long as any thickening of the part, or inflammation in it, remains, the skin will be apt to become sore again on very slight provocation. If the skin be at all tender, or if there exist in it any scars from previous attacks of this inflammation, the quicker the work, the more liable will the ailment be to assume an aggravated form, or to commence anew, as the case may be; on account of the skin of the part being subjected to a greater amount of

bending, and being more exposed to chill, than when the work was slow. The fibrous tissue which forms the white mark left by a scar, does not possess the same degree of elasticity and suppleness as the uninjured skin. Besides this, when the skin is inflamed, it is but poorly supplied with lubricating fluid from the oil-glands, and is, then, ill calculated to resist the effects of severe and continued bending.

Crib-biting.—This habit is regarded, from a legal point of view, as a vice and not as an unsoundness; as we may see from the case of *Scholefield* v. *Robb*,* which was, "on the warranty of a horse 'that it was sound and free from vice' . . . The horse was bought to be delivered at a future day, and the case of the plaintiff was, that the horse was a crib-biter and wind-sucker.

"Parke, B., told the jury, that if they thought the horse, at the time of its being sold, and of the warranty being given, was not a crib-biter, their verdict on both the last issues must be for the defendant; but, even if the evidence of the plaintiff satisfied them that the horse was a crib-biter at the time of the warranty, such evidence would not, in his opinion, support the allegation that it was then unsound, so as to entitle the plaintiff to a verdict on the second plea. To constitute unsoundness there must either be some alteration in the structure of the animal, whereby it is rendered less able

* Moody and Robinson's Reports, vol. 1, p. 210.

to perform its work, or else there must be some disease. But neither of these facts had been shown. If, however, the jury thought that at the time of the warranty the horse had contracted the habit of crib-biting, he thought that was a 'vice,' and that the plaintiff would be entitled to a verdict on the third plea. The habit complained might not, indeed, like some others (for instance, that of kicking), show vice in the temper of the animal; but it was proved to be a habit decidedly injurious to its health, and tending to impair its usefulness, and came, therefore, in his Lordship's opinion, within the meaning of the term, 'vice,' as used on such occasions as the present." I may mention that this is the accepted ruling on "vice."

In the case of *Broennenburgh* v. *Haycock* * (Westminster, 1817), it was, also, ruled that crib-biting was not unsoundness.

Crib-biting may give rise to disease (indigestion, for instance), and to excessive wear of the teeth, which, in either case, might be regarded as unsoundness. Looked upon from a practical, though not from a legal point of view, it ought, in all instances, be deemed unsoundness; as it diminishes the usefulness of the animal, with whom special precautions have to be observed, both to prevent him practising this habit, and teaching it to other horses, who, according to my experience, readily learn it by

* Holt's Reports of Cases in Nisi Prius, vol. 1, p. 630.

imitation. A healthy horse may undoubtedly acquire the habit, and thereby get his digestion impaired; but I cannot say—although it is very commonly considered—that indigestion is a cause of cribbing. The fact of a horse being a cribber should always be mentioned in the certificate.

Cutting.—Under this heading, we may include speedy-cutting, brushing, tread, interfering, and over-reaching. Cutting is, generally, due to malformation; weakness, either natural, or brought on by fatigue; faults of shoeing; over-taxation of strength; nature of the ground on which the animal travels; and awkwardness of gait occasioned by disease, or by alteration of structure. The case of *Dickinson* v. *Follett** (Exeter, 25th July, 1833) is the only one I can find on this point, and is as follows: "The warranty was admitted. The horse had been kept and used by the plaintiff as a carriage horse (for which purpose he was bought) about a month, and was then tendered to be returned as unsound. It was admitted that the horse was unsound at that time, but there was conflicting evidence whether the unsoundness existed at the time of the sale, or whether it arose from some subsequent cause; and, on the other hand, a veterinary surgeon, called for the defendant, after giving his opinion that the lameness arose from a recent injury, stated also, that the horse was so ill-formed, from

* Moody and Robinson's Reports, vol. 2, p. 299.

turning out one of his fore legs, as to be incapable of work to any extent without cutting, so as to produce lameness.

"Follett, in his reply, contended, that at all events the horse was unsound from this malformation; that a horse so ill-formed as to be incapable of the ordinary usefulness of a horse was unsound.

"Alderson, J., on summing up, said, that the horse could not be unsound in law, merely from badness of shape. As long as he was uninjured, he must be considered sound. When the injury is produced by the badness of his action, that injury constitutes the unsoundness. His lordship then put the other parts of the case to the jury, who found a verdict for the defendant."

Although the foregoing *dictum* appears to settle the subject of "cutting" in a very definite manner; still, if we also take into consideration the more recent rulings on *Holyday* v. *Morgan* (*see* page 5) and *Coates* v. *Stephens* (*see* page 6), we must admit that a horse should be regarded as unsound, if he is less than reasonably fit for immediate use, for instance, by reason of his habit of cutting. This would, especially, apply to horses required for cross-country work, at which, animals given to the fault in question might be most dangerous to ride. Besides this, I hardly think that a horse which required the employment of special precautions, such as a peculiar method of shoeing, or the wearing of "boots," to prevent

him from cutting himself, could be deemed sound. I would, therefore, as a veterinary surgeon, pass, as sound, a horse that had marks of cutting, only, after finding that he did not do so, during a searching trial, such as a day's hunting, or a fairly long day's journey.

Dropped hip (Fracture of anterior iliac spine).—The consequences of this accident are lameness and the formation of abscesses near the seat of injury. Repair, however, may take place by the formation of a false joint, and the action of the horse may remain unaffected; in which case, he may be passed as sound; although the fact of the existence of the blemish should always be mentioned in the certificate. I have the authority of Dr. Fleming for saying that he agrees with me on this point.

Eczema.—See "Skin Diseases."

Feet, brittle.—See remarks on "Sole, weak," page 25.

Filled legs from work.—If a horse was aged, I do not think that the fact of his legs being slightly "filled," or a little "worn," should be sufficient to cause him to be rejected on the score of unsoundness; provided, that it did not, in any way, diminish his usefulness: To fulfil this requirement, the structures of the limb should show no unnatural heat or tenderness; the integrity of the tendons and ligaments should be thoroughly assured; and any slight fulness that may be present, should have no appearance of having been caused by any con-

stitutional disease or weakness. When a young horse shows signs of work, the case is, however, very different. All such questions of soundness as those of filled or worn legs can, naturally, be decided only by the examining veterinary surgeon.

Firing, marks of.—Some owners, as a preservative measure, make a practice of firing the hocks of their young horses, in the event of their considering that these joints show signs of weakness. The Arabs and other Eastern nations employ the hot-iron in a rather indiscriminate manner, as a remedy for various ailments, some of which, such as colic, may be but of a temporary nature. In all cases where we find marks of the actual cautery, we should redouble our efforts to discover if there exist, in the part, anything which might militate against the soundness of the animal; but if we are unsuccessful in our search, we should not reject the horse because of the existing blemish, which in itself does not come under the definition of unsoundness.

Galls, harness and saddle.—See remarks by Mr. Baron Parke, page 3.

Grunting.—"If a horse, when struck at or suddenly moved, emits during respiration a grunting sound, it is called a 'grunter.' Such a sound may or may not have any connection with disease of the larynx. A horse will grunt with pain when suffering from pleurisy, pleurodynia, and other diseases. Some horses habitually grunt

when struck at or moved suddenly. A great number of cart-horses are so affected, and big horses of all breeds are very apt to be grunters, whilst they may be quite sound in their wind. Horses with heavy jaws and ill-set-on necks often emit this sound; and again any horse may do it if it has been fed for a time with bulky food. The sound is always to be regarded with suspicion, and the animal further tried for its wind, as it generally accompanies roaring and whistling. If the grunter, however, stands the tests used to detect roaring without making any noise in its breathing, it may be considered sound" (*Williams*). The fact of a horse being a grunter, even if he does not "make a noise" during movement, indicates, in the majority of cases, a strong tendency to roaring; and should always be mentioned in the certificate. I make bold to affirm that if a young horse, say four years old or under, is found to be a grunter, and it is known that one or both of his parents were roarers or whistlers, he should be looked upon as unsound in his wind; for, if he is not so already, he will almost infallibly become so, later on.

Herpes.—See "Skin Diseases."

Hip, dropped.—See "Dropped Hip."

Hoof, split.

Hoof, weak.—See remarks on "Sole, weak," page 25.

Ischium, fracture of tuberosity of.—In popular language, we may term this, "fracture of the point of the

buttock." This accident causes flatness of the bony prominence which may be seen, on either side, behind, and a little below the root of the tail. When repair takes place and any resulting lameness disappears, the animal may be regarded as sound; although the fact of the existence of the blemish should be noted.

Knees, broken.—See "Broken knees," page 30.

Legs, filled, or worn.—See "Filled legs," page 39.

Mud fever.—See "Skin Diseases."

Nettle-rash.—See "Skin Diseases."

Odd Feet.—See "Contraction of the Foot," page 32.

Parrot-mouth.—This would, naturally, be an unsoundness, or not, according to its degree.

Prurigo.—See "Skin Diseases."

Rat tails.—See "Skin Diseases."

Ringworm, non-parasitic.

Sitfasts.—As the presence of the sitfast generally interferes with the putting on of the gear, it should, in most cases, be regarded as an unsoundness. See "Skin Diseases and Wounds."

Skin Diseases and Wounds.—Cases under this heading should be decided according to the principle laid down by Mr. Baron Parke. See page 3.

Sole, weak.—See "Sole, weak," page 25.

Sore-shins.—This form of bony deposit, unless when very exaggerated, seldom interferes with the animal's usefulness, after the inflammation has subsided.

Speedy cutting.—See "Cutting," page 37.

Splint.—A splint is a bony formation on the side or back of the cannon bone of either the fore, or hind limb. If it be on the back of the bone, it will, almost certainly, also appear on both sides. Some authorities consider that splint is due to ossification of the ligament which connects the splint bone, on either side, to the cannon bone; and that this term should, therefore, be limited to bony formations which involve both the splint and cannon bone; while others employ it independently of any connection it may have with the ligament in question. This difference of opinion is of no practical importance, as far as our subject is concerned. No distinguishing name is given to bony formations on the cannon bone which do not come under the term of splint or sore shins; although, like the two last mentioned, they would be classed under the general heading of "Exostoses."

Almost all veterinary surgeons will agree that a splint which is well away from the knee, does not interfere with the working of the tendons or suspensory ligament, nor with the action of the other leg, is not an unsoundness; provided, that it does not cause lameness, and that the horse is at least six years old. The qualification of age might, in some cases, be dispensed with. If the animal is young, and, especially, if he has not done much work, the fact of his having a splint, would indicate that the leg

is not of the proper kind to stand much "knocking about." A splint on the outside of the leg is more apt to cause lameness, than one on the inside. A splint, other things being equal, has a greater tendency to injuriously affect the usefulness of an animal that has to do its work at a trot on roads, than that of those which are confined to a walk, or to work in the field. The forms of splint which are generally regarded as undoubted unsoundness are: (1.) Two splints; one on the outer, the other on the inner side of the leg, and on the same level; their relative position being almost a certain indication that they are connected together by a bony deposit which can hardly fail to interfere with the action of the suspensory ligament. (2.) A splint close to the knee, or suspensory ligament. (3.) Two splints, one above the other, and on the same side of the leg. This form shows considerable weakness of the bone, and almost always causes lameness, especially, when the two splints are united by a bony ridge.

From *Margetson* v. *Wright** (11th May, 1832), it appears that a horse with a splint can be passed sound, if the bony deposit, from its size and position, would not be liable to cause lameness; leaving out of consideration what its results might be, were it to increase in size, or invade other structures. Lord Chief Justice Tindal's judgment on this case was as follows:—"This

* Moore and Scott's Cases in Common Pleas, etc., vol. 1, p. 622.

was an action upon a warranty, in which the defendant warranted the horse to be sound in wind and limb 'at the time,' that is, at the time of the warranty made. The jury at the trial found a verdict for the plaintiff; the learned Judge requesting them to tell him distinctly whether in their judgment the horse was sound; or, if they believed him to be unsound, whether that unsoundness arose from the splint of which evidence had been given. In answer to which inquiry, the jury said, 'that, although the horse exhibited no symptoms of *lameness* at the time when the contract was made, he had then upon him the seeds of unsoundness arising from the splint.'

"The question upon this application for a new trial, is, whether this finding of the jury sanctions the verdict for the plaintiff or not; that is, whether the Court can see with sufficient clearness that the jury thought that the horse was unsound at the time of the contract, and, consequently, that the warranty was broken. It appears that the evidence before the jury was, in substance, that the splint might or might not be the efficient cause of lameness, according to the position which it occupied, and its size and extent; that this splint was in a very bad situation, as it pressed upon one of the sinews, and would naturally produce, when the horse was worked, inflammation of the sinew, and consequent lameness. The jury, therefore, drawing their attention to this particular

splint to which the evidence related, appear to us to have intended that this individual splint, though it did not at the moment produce lameness, was, at the time of contract, of that sort, and in that situation, as to contain, in their language, the seeds of unsoundness, that is, the efficient cause of the subsequent lameness. If the lameness complained of had proceeded from a new or different splint, or from the old splint taking a new direction in its growth, so as to affect a sinew, not having been on one before, such a lameness would not have been within the warranty; for it would not have constituted a present unsoundness at the time of the warranty made. But the jury find that the very splint in question is the efficient cause of lameness.

"On the former motion, our attention was not called to any evidence, if any such was given, as to the different nature and consequences of splints, which the learned Judge reports to have been given upon the present occasion; but it now appears that some splints cause lameness, and others do not, and that the consequences of a splint cannot be apparent at the time, like those of the loss of an eye, or any other blemish or defect visible to a common observer. We, therefore, think that, by the terms of their written warranty, the parties meant that there was not at that time, a splint which would be the cause of future lameness, and that the jury have found that it was.

"We therefore think that the warranty was broken."

In *Smith* v. *O'Bryan** (3rd Nov. 1864) the horse which was warranted sound, had a splint, that, at the time of sale, did not cause lameness. The fact of the animal, subsequently, becoming lame, on account of this splint, was held to be a breach of warranty.

Split-hoof.—Under this heading, we may class those divisions of the horn of the hoof which do not take the characteristic form of "sand-crack." They may or may not be unsoundness, according as they affect the animal's usefulness.

Surfeit.—See "Skin Diseases."

Tetter, dry.—See "Skin Diseases."

Tetter, humid.—See "Skin Diseases."

Tread.—See "Cutting," page 37.

Warbles.—See remarks by Mr. Baron Parke, page 3.

Warts.—See "Skin Diseases."

Weaving.—This is a vice, and not an unsoundness. See page 35.

Windgalls.—If a windgall is soft and fluctuating to the touch; shows no sign of inflammatory action; does not injuriously affect the horse's movements in any way, and does not become heated after work; its presence may be regarded as no detriment to the animal's soundness, especially, if the horse is aged.

Wind-sucking.—This habit, as well as crib-biting, is

* *The Law Times*, vol. 11, New Series, p. 346.

looked upon, from a legal point of view, as a vice, and not as an unsoundness (see page 35). It should always be regarded as a very grave defect; for it seriously interferes with the animal's usefulness. It is a more injurious habit than crib-biting.

Worn Legs.—See "Filled Legs," page 39.

CHAPTER IV.

HEREDITARY UNSOUNDNESS.

As it is impossible, with our present state of knowledge, to define, even with approximate accuracy, the limits of the influence of hereditary predisposition in the transmission of disease, deformity, or proneness to alterations of structure; I shall here content myself with regarding the subject from a purely practical standpoint; and shall, accordingly, enumerate only those defects which show a marked tendency to be transmitted from parents to offspring. Any form of unsoundness to which an animal might have been predisposed, on account of faulty conformation, should be looked upon, in stud animals, with considerable suspicion; for "like" has always a strong tendency to produce "like." No objection could be made to a horse or mare for breeding purposes, because he or she had lost an eye by accident; although the case would be very different, with a strained back tendon or suspensory ligament. This, however, would be a question which could be decided only after a personal

inspection. I may remark that the following list has special reference only to stud animals.

Amaurosis.

Asthma.

Bent fore-legs.—Under this term we may include the condition shown by some horses, of "standing over" at the knees, and, also, that of knuckling over at the fetlocks. Although that good authority, Mr. W. Hunting, F.R.C.V.S., considers that bent fore-legs are always the result of previously existing pain in the limb; I venture to say that the weight of opinion in the veterinary profession, is in favour of the idea that this condition is, in many cases, due to hereditary predisposition. The large majority of breeders are, also, prejudiced against using, for stud purposes, animals which show this peculiarity. At the same time, it is quite certain that work alone will induce it, and that it may, also, be caused by neglect in the management of the feet. However brought on, it ought, I think, to be looked upon as a grave defect, in the present connection.

Bog-spavin.—If the hocks are well formed, this affection (as well as thoroughpin), when it exists to but a slight degree, may be overlooked. Its presence, however, in aged animals, unless when caused by some accidental sprain, is, as a rule, indicative of faulty conformation of the part. Among heavy cart-horses, especially, we find the influence of hereditary pre-

disposition strongly marked, in the case of bog-spavins and thoroughpins, the possession of either of which affections, if they were well developed, should be sufficient cause for the immediate rejection of an animal for breeding. Heavy entires, even with the best of hocks, are, often, apt to get them puffy, on account of straining them when covering.

Bone-spavin.—This should always be a disqualification, unless, perhaps, in the somewhat rare case of its having been caused by external injury.

Broken wind.

Cataract.

Contraction of the foot (see page 32).—The fact of one foot being smaller than its fellow, especially, in the fore limb, and if the difference of size be at all marked, would be sufficient cause for the immediate rejection of an animal for stud purposes. It goes without saying, that any deformity of the part should be regarded in the same light.

Curb.—The possession of a curb would always be of serious detriment to the value of a stud animal, and, especially, for breeding hunters, steeple-chasers, and chargers. It might, however, be overlooked in a race-horse of exceptional speed and stamina, like, for instance, St. Simon, who is faulty in this respect; for, considering the early age at which race-horses are put to work, we ought to be more lenient with them, than with animals

that are given more time to mature. Besides this, they are not put so much on their haunches, as are cross-country horses and troopers.

Fever in the feet, and its effects.

Glaucoma.

Hoof, defects of the.—No defects of the hoof, which are congenital, or caused by laminitis, and which might render it unduly weak or brittle, should be passed over in stud animals.

Laminitis, and its effects.

Navicular disease.

Ophthalmia, periodic.

Ossification of the lateral cartilages ("side bones").

Pasterns twisted.—Here the toes are turned either in or out.

Ringbone.—True ringbone is one of the most objectionable defects in a stud animal; while even the false kind, which is a bony deposit on one of the pastern bones, and does not implicate any of the joints of the foot, should not be lightly passed over.

Roaring.

Side bones.

Sight, congenital defects of; supposing, that they affect the animal's usefulness.

Spavin, bog.—See "Bog-spavin," page 50.

Spavin, bone.—See "Bone-spavin," page 51.

Splints.—Splints should be viewed with great suspicion

in mares and horses that are reserved for breeding purposes; for the law of heredity is well marked in the tendency, possessed by some animals, to throw out bony deposits on the limbs, at, and below, the knees and hocks.

Thick wind.

Thoroughpin.—See "Bog-spavin," page 50.

Whistling.

CHAPTER V.

METHOD OF EXAMINATION.

First Stage.

Look at the horse while he is standing quietly in his stall, so as to observe if he points with either fore foot; stands in any constrained attitude; or shows signs of cribbing, wind-sucking, or weaving. We should also see if there is anything peculiar in his stable management, which might indicate vice or infirmity. For instance, the side of the manger may be covered over with iron net-work, or some strong-smelling or bitter compound to prevent crib-biting. The horse may have on a side-stick or cradle to prevent him tearing his clothing, &c.; a crib-biting muzzle, or a strap round his neck to stop him from cribbing or wind-sucking; or hobbles, or a log, if he is inclined to kick, or to injure himself by continually pawing the ground with a fore foot; or he may have marks on his neck of a crib-biting strap. Bales of one kind or the other are sometimes used to prevent a horse, which is that way inclined, from kicking his stall or

himself "to pieces" during the night. Arrangements for pulling the horse round, without getting in reach of his teeth or heels, will be sufficient to put the most careless observer on guard. I need hardly say, that, for this important portion of the examination to be effective, the horse must be perfectly tranquil and cooled down from the effects of recent work, and must not have undergone the process of being "warmed up."

Second Stage.

We may now make the animal move over from one side of his stall to the other, to see how he bends his hind limbs; for symptoms of spavin or stringhalt are often best observed at this time. We must, however, guard against being deceived by any exaggerated hind action, due to the horse being accustomed to stand in deep straw bedding.

Third Stage.

Get an assistant to put on the horse a plain snaffle bridle; have him turned round in his stall; and examine his eyes, nostrils, and mouth.

Examination of the eyes.—In order to ascertain that the haw and conjunctiva (the membrane which lines the eyelids and covers the eyes) are in a healthy condition, we may open the eye in the following manner: After having "made much" of the horse, place a hand on his

nose to prevent him from going forward, or catch hold of the lower lip if he wants to depress his head too much. Then, by means of the forefinger and thumb of the other hand, open the eyelids by pressing the ball

Fig. 1.

of the eye into its socket (see Figs. 1 and 2). This causes the haw and a large amount of the inside of the eyelids to be shown.

To examine the eyes themselves, we may, first of all, look at them with a full stream of daylight coming in on them. They should then appear prominent, soft, clear, and free from tears and other signs of inflammation or

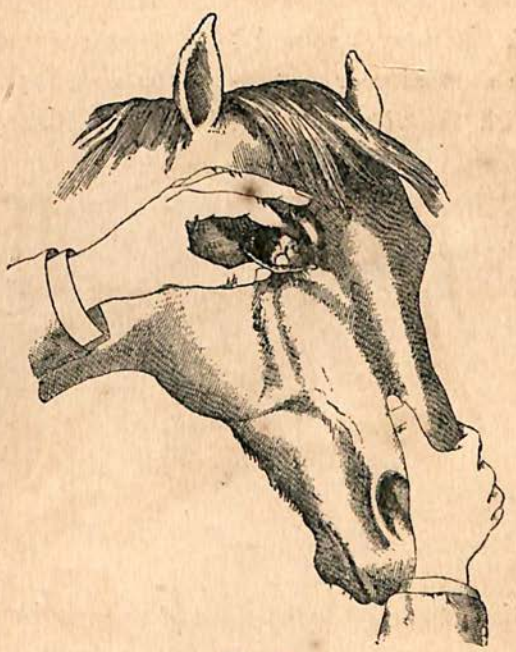

FIG. 2.

irritation. They should show no intolerance of light, as might be indicated by their being deep-sunken; by the more or less closed condition of the eyelids; and by the haw projecting more than usual over their surface. The eyelids should be devoid of any unnatural fulness, and

should not present that peculiar wrinkled condition which is symptomatic of periodic ophthalmia. I may mention that, when an eye has suffered from an attack of this not very common disease, it looks dim, weak, and smaller than natural. A representation of a healthy eye is given in Fig. 3. Both eyes should be of the same size. Any excessive convexity or flatness of the cornea should be noted, with the view of ascertaining how it may affect

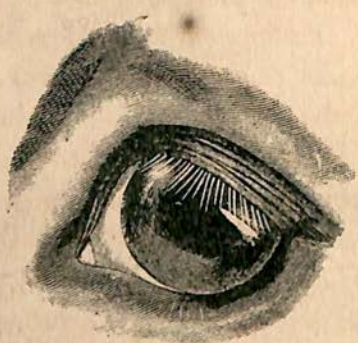

Fig. 3.

the sight. We may try the sight of one eye by shading the other, and by gently moving the fingers of the disengaged hand close to the uncovered eye, taking care not to touch the eyelashes, nor to produce a current of air, which, by affecting the nerves of the part, might make the animal blink, and might thus convey a wrong impression to our mind.

The eyes may now be examined by means of a candle,

or small lamp, in a place from which all other light is excluded; the object being to allow the pupil to dilate as much as possible, so as to expose, to the utmost extent, the interior of the eye. If this is not practicable, light coming from one direction only, such as from a top window or skylight, should be employed. Light reflected from white objects, such as whitewashed walls, a white waistcoat or shirt front, should be carefully excluded; for it would be apt to cause the production, in the eye, of white images, the appearance of which might interfere with the accuracy of the observer's scrutiny. The plan of examining the sight in the open air, while shielding the eye with the top of a black hat from the reflection of white objects, is far too rough a procedure by which to arrive at correct results. While covering one eye with the hand, and bringing the light close to the other eye, and then drawing it away, we should see if the pupil of the eye which is being examined, contracts and dilates in a natural manner; that no part of the iris is adherent to the lens; and that the power of contraction and dilation is the same in both eyes. Each eye should be examined separately; for one may be completely blind from amaurosis, and yet its pupil will obey the stimulus of light applied to the sound eye, although it will be insensible to that falling on its own retina. While making this experiment, we may see if the *corpora nigra* (the small brownish-black balls that are to be seen,

principally, on the upper margin of the pupil) are regular; for it sometimes happens that one or more of them become torn away from the iris, and may, consequently, affect the vision. The cornea should be carefully examined, to see if there are any scars or opacities on it; and, while holding the candle or lamp a little to one side, and raised or depressed, as the case may require, we should look through the pupil, and try to detect any speck on the lens or its capsule, the fact of the existence of which should be sufficient to cause the rejection of the horse for cataract. We may also regard the eye from one side, while holding the taper to the front. To further test the condition of the lens, we may hold the light a little to one side of the eye, and look for the three images of the flame that are to be seen in a healthy eye; the first and brightest being reflected from the cornea; the second and largest from the front surface of the lens; and the third, which is small, dim, and placed upside-down, from the back of the lens. If the flame be slowly moved from one side to the other, the first two images will follow the direction of the candle, while the third and reversed one will go the opposite way. If a cataract be present and complete, the third image will be absent. If it be only partial, the view of the third image will be found to be obstructed when the light falls on the opacity. The ophthalmoscope might frequently be used with benefit in the examination of the eyes of the horse.

As its description, however, is beyond the limits of this work, and as it requires practical instruction to attain facility in its use, I need not further allude to it here. In cases of doubt as to the condition of the lens, we may employ a magnifying glass. If it is necessary to dilate the pupil, we may use, for that purpose, a drop or two of *liquor atropiæ sulphatis.*

Examination of the nostrils.—We require to open each nostril, in order to examine the passage itself, and to see that the mucous membrane shows the pink hue of health. No mistake should be made about the accidental presence of dust in the nostrils. The nostrils should be examined for ulcers; scars; polypi; irregularity in the calibre of the passages; and for the existence of any discharge. To open, say, the off one, hold the lower lip with the left hand, place the thumb and forefinger inside the nostril, as shown in Fig. 4, and enlarge the opening by drawing them apart. The orifice of the lachrymal canal should be in a natural condition. It is found on the lower part of the nostril "near the point where there is a line of demarcation between the dark colour of the skin, and the rosy tint of the mucous membrane" (*Lecoq*). The false nostrils should be thin, pliable, and free from any thickening, injury, or results of injuries.

Examination of the mouth.—Open the horse's mouth and ascertain his age (see Chapter VI.). Observe that his teeth are regular; his tongue and lips, in good

working order; the mucous membrane of the mouth, in a healthy state; and the breath, sweet smelling. The following is the method described by MM. Goubaux and Barrier for opening the mouth:—The examiner having

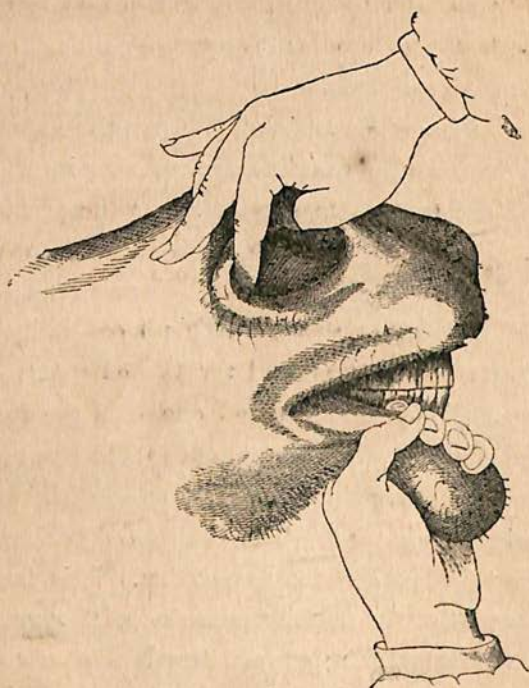

Fig. 4.

placed himself on the near side and out of the line of action of the near fore, in order to avoid being hit, seizes, with the left hand, the lower lip (see Fig. 5), or places this hand on the front of the nose, to prevent the animal

from going forward. He, then, takes the tongue with the right hand, by introducing the first two fingers between the lips, at the "bars" (the part of the gum that is free from teeth). These fingers catch the tongue, and hold it between the thumb and ring-finger, so as to prevent it from slipping. It is then drawn out.

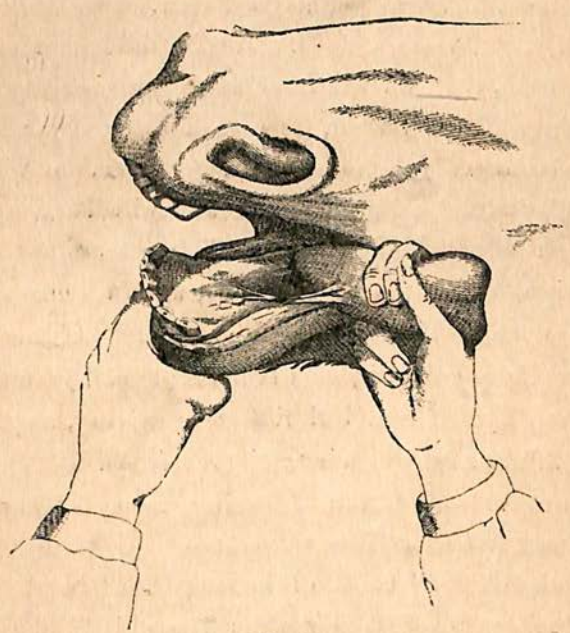

Fig. 5.

Fourth Stage.

Direct an assistant to trot the horse slowly with a long rein and smooth snaffle, on smooth, hard ground, to see if he is lame. The animal may be trotted,

backwards and forwards, thirty or forty yards, and turned quietly, and, also, sharply, to the right-about, and to the left-about. When observing him in movement, the examiner might stand, successively, behind the horse, in front of him, on the near side, and on the off; taking care to be sufficiently far away from the animal, so as to get a good view. The horse will, naturally, put more weight, and "dwell" longer on the sound limb, than on the lame one. He will, also, work the joints of the former, freer than those of the latter. If he be equally lame on both fore-legs, he will go "short," "stiff," and "tender"; and will have an inclination to roll his body from side to side, so as to take the weight off, as much as possible, when the foot comes to the ground. He will, also, show marked improvement in his style of going, if he is taken on to soft ground.

"Some horses, from bad riding or driving, acquire a sort of *hitch* or *lift* in their trot" (*Percivall*).

I have extracted the following remarks from my *Veterinary Notes for Horse-Owners*:—

Certain obscure cases of lameness can be detected only during the first few steps the animal takes on quitting his stable; for he may, subsequently, "work" sound.

If a sound horse when trotting, has his head turned towards the man who leads him, going in a sort of "left shoulder in" fashion, he may appear to be lame on the

near fore-leg; on account of stepping shorter with it, than with the off fore.

If we suspect the existence of spavin, we may take up the foot and bend the hock, retaining it in that position, for about a minute. If, after that, the animal trots quite sound, we may consider that the joint is all right.

Before putting the horse in, we should try if he backs with freedom and regularity of gait.

If no lameness be noticed, we may send him back to his stable, and, as a final test, may allow him to stand for a few hours, and, after he has thoroughly cooled down, try him again. If he passes satisfactorily through this second ordeal, we may, as a rule, regard him to be sound in limb.

In obscure cases of lameness, we may suspect bone disease—such as incipient ringbone—as the cause, if the horse stands level in his stall, but trots very lame on hard ground.

Lameness improves with exercise, except, as a rule, in cases of splints, ringbones, side-bones, sore shins, corns, chronic laminitis, villitis, and sprains.

When the animal is lame behind, the disease is, generally, in the hock; when in front, in the feet of cart-horses, or in the suspensory ligaments of gallopers.

By the suggestion of my friend Mr. G. A. Banham, F.R.C.V.S., I have advised that the horse should be tested for lameness, before "looking him over;" lest the

observation of any defect might bias our judgment as to the evenness of the animal's action.

Fifth Stage.

Have the horse placed on level ground with the attendant standing in front of him, and holding him straight with a rein in each hand. The examiner should then walk round, and look the animal carefully over. The following are the chief points which should be noted:—(1.) That the horse stands in a sound, healthy attitude. (2.) That his legs are properly shaped, and do not show "wear" sufficient to constitute unsoundness. (3.) That he has got neither odd, nor unduly small feet. (4.) That the look of his coat and his general appearance indicate good health. (5.) That the movements of the flanks are natural, and do not give the impression that there is anything wrong with the "wind." (6.) That the hips, or buttocks are not "down;" no other portions of the pelvis displaced; and the vertebræ of the tail uninjured. (7.) That the animal is free from sore shins, curb, and any "bow" about the back tendons. (8.) That both sides of the body are symmetrical; and that there is no deformity, other than I have mentioned.

Sixth Stage.

Having previously examined the eyes, nostrils, and mouth, we should look over the face to see if there is any

peculiarity on it, either from injury or disease. The "chin-groove," which is the smooth portion of the lower jaw, on which the curb-chain (when used) should rest, and the branches of the lower jaw, a little above this groove, should be examined for signs of recent injury, or from bony deposits resulting from an improper use of the curb. Although the fault may lie with the rider or driver, still we may reasonably infer that a horse whose mouth has been pulled about a good deal, will not be a pleasant "conveyance." Feel the space between the lower jaws for swollen glands, and observe if the skin over the larynx has a swollen appearance, and if there be any mark left from tracheotomy having been performed. Feel the poll for poll-evil, and the space between the ears and the angle of the lower jaw, for enlarged glands. Examine the ears, find out that they are all right. Run the hand along the crest to the withers, and see that they are free from wounds, soreness or old scars. If the mane hangs to the near side, it should be put over, to see that it does not conceal any wound on the neck. Examine the course of the jugular vein down the near side of the neck, for marks of "bleeding," and try if the flow of blood through it is unimpeded. See that the near shoulder is free from "wasting," and harness-galls. If there be doubt as to the state of the muscles, the two shoulders should be compared with each other. We should observe that the

near elbow is not "capped"; that the horse is free from girth-galls, and is not otherwise chafed. The amount of "wear" shown by the near leg; any "standing over" at the knee; or undue uprightness or unusual obliquity of the pastern, should be carefully considered. The knee should be examined for signs of injury; the front of the cannon bone, for sore shins; the fetlock, for any swelling or undue roundness; the pastern, for ringbone or split-pastern; and the front of the coronet, for disease of the pyramidal process of the coffin bone, or for a diseased state of the coronet itself. Going to the back of the leg, we may see if the animal is free from mallenders; injury of the check ligaments, back tendons and suspensory ligament; splints; marks of "unnerving," speedy-cutting, or of the use of a speedy-cutting boot; windgalls, a puffy condition of the fetlock; marks of "brushing"; thoroughpin of the fetlock; sessamoiditis; sprain of the ligaments at the back of the pastern; overreaches on the back tendons or heels; side-bones; cracked heels and grease. We may now examine the coronet for quittor; carbuncle of the coronet; marks of bleeding and firing; villitis; recently "sprung" sand-crack; tread; and false-quarter. If marks of firing be present, they will also be, as a rule, on the pastern. We may now feel the coronet and hoof to see that there is no unnatural heat in them, and that no throbbing or unusual fulness in the blood-vessels of the former, can be

perceived. In case of doubt, the state of these parts should be considered with reference to that of those of the off fore. We should compare both feet, to see that they are of the same size and shape. The wall of the hoof should be looked at for signs of inflammation of the feet, sand-crack, false-quarter, villitis, horn tumours, seedy-toe, and for fissures of various kinds. The horn should be sound and strong. Having picked up the foot, we should see that the heels are not contracted; the frog free from thrush, and well developed; the sole concave; and the ground surface of the foot healthy, free from wounds and signs of canker. We may note if the animal has had the "seat of corn" recently pared out; if he is shod in any particular manner which might indicate unsoundness or defective action; and if his hoofs have been filed with the object of concealing malformation or disease. If we suspect seedy-toe, we may endeavour to test our supposition by tapping the outside of the hoof with a hammer. The practice of comparing one leg with another, should be followed in the majority of doubtful cases, especially, as regards the existence of sprain, "standing over at the knees," and size of the feet. I have here purposely omitted the subject of navicular disease; for, as far as I know, it presents no distinctive symptoms, its presence being generally characterised by "pointing," lameness, and contraction of the heels, all of

which may be observed in other diseases. We may, however, strongly suspect that the horse has been treated for this very serious ailment (whether or not it had existed), if we perceive the mark left by a frog seton.

We may now run our hand over the back, to find if there are any warbles or sitfasts present. The ribs may be examined for fracture; the belly, for umbilical and ventral hernia; and the scrotum, for inguinal hernia, and for scirrhous cord in the case of geldings, and of rigs which have had one testicle removed. If the animal is a horse, we should note whether he is an entire, or a rig. We should try the points of the hips to see that they are not broken; and should look at the croup, pelvis and tail for signs of fracture. I may mention that weakness of the muscles which raise the tail, often indicates injury or disease of the spinal cord. An open and flaccid condition of the anus, generally, points to serious digestive derangement. The fact of the horse having been recently docked, should be noted; as tetanus (lockjaw) may be brought on by this operation.

We should look at the stifle for signs of treatment for luxation of the patella, and should examine the inside of the leg, between the stifle and hock, where the bone is but thinly covered, for wounds and bruises. We may then look for capped hocks, curb, thoroughpin, bog-spavin, sallenders, bone-spavin, bony deposits on the outside of the hock, and the various ailments to which I

have alluded, when describing the examination of the fore limb. When examining the near hind, we should not forget to compare it, when necessary, with the off hind, especially, in cases of suspected spavin. Having finished with the near hind, we may proceed to the off hind, and then, working forwards, finish at the head.

In making the foregoing observations, I have omitted many obvious points which the examiner could not fail to see, when going over the horse.

Feeling the fore-legs.—The following neat method is taught by Professor Williams to his students at the New Veterinary College, Edinburgh:—To feel the near fore, for instance, the examiner, while keeping his knees straight, should run his right hand down the front of the leg with a light and moderately rapid touch. Then, turning round to the right, he should pass his left hand, in like manner, over the structures at the back of the leg. The suspensory ligament which is, more or less, in the centre of the leg, as viewed sideways, will be felt in both operations. If only one hand be used, the impressions from the touch will not be conveyed to the mind, as distinctly as they would be, were both hands employed. If too much pressure be applied, or the hand be allowed to dwell too long in its course, an incorrect impression may, very possibly, be formed. It is a slovenly and somewhat ridiculous procedure to squat down and feel a leg with both hands, one to the front, the other to the

rear, at the same time. When feeling the off fore, the left hand should go down the front of the leg; and the right, the back of the limb.

Seventh Stage.

Test the wind by galloping, or by making the horse exert his full powers in draught, until his lungs are brought into full action. For the former, a soft piece of ground should be chosen; for the latter, if a heavy load be not available, the hind wheels of the cart may be locked, by a stout pole being passed between their spokes. If there be no opportunity for either galloping or putting the horse in harness, the examiner may try to make him "grunt." This is done by placing the horse with his off side close to a wall, catching him, by the bridle, close up to the head with the left hand, and, then, suddenly threatening to strike him under the belly with a stick or whip carried in the right. In sale-yards, where horses are frequently "grunted," it is well to have, as at Tattersall's, a large sheet of vulcanized rubber attached to the wall, so that the animal may not injure himself by coming against it. A certificate of soundness, as far as "wind" is concerned, should not be given to a horse, from the mere fact of his going through the grunting test successfully.

Eighth Stage.

Remove the shoes, and examine for corns, seedy-toe, bruises of the sole, and other ailments of the feet. Test the rigidity of the sole, and apply the pincers all round, to see that there is no soreness.

CHAPTER VI.

EXAMINATION OF THE MOUTH FOR AGE.

Means of ascertaining a horse's age—Different kinds of teeth—Form of the teeth—Structure of the teeth—Changes undergone by the teeth with age—Dates of teething—Causes which may hasten or retard the appearance of the permanent teeth—Dates from which horses are aged—Plates showing the different ages by the incisors.

Means of ascertaining a horse's age.—I propose, in this chapter, to limit the consideration of the animal's age to the indications furnished by his teeth. We may determine whether a horse is old or young, by his general appearance; by the fact that the bones on each side of his nose "fall in," on account of the descent of the back teeth, as he gets older; and, in the case of a grey or roan, by the whitening of his coat. Almost all horses when well stricken in years, show white hairs, especially, about the temples. The depth of the hollows above the eyes are, to a certain extent, a guide to the age of the animal; although they may be prematurely deep in the stock of old parents, and, possibly, in young horses that have suffered for a considerable time from debility. The

curly condition of the tail seen in yearlings, will clearly prove their youthfulness. These indications are, however, too vague to be of any practical use; unless, indeed, we are unable to examine the mouth.

Different kinds of teeth.—A horse with a "full mouth" has forty-two permanent teeth; namely, twelve *incisors* (front teeth, or "nippers"), six in each jaw; four *tushes*, or canine teeth; and twenty-four back teeth, or *molars*. In the mare, the tushes are either absent, or are in a rudimentary condition. In some cases, the horse has what are called "*wolf's teeth*," which have single fangs, and resemble, in this respect, tushes and incisors. When they exist, they are placed in front of the back teeth. "They are found more frequently in the upper than in the lower jaw; they are rarely met with in both" (*Goubaux and Barrier*). We may see in Fig. 6 the arrangement of the teeth. The two front incisors are called the *front* or *centre;* the next pair, the *middle* or *lateral;* and the two furthest back, the *corner incisors*. The molars are numbered 1, 2, 3, 4, 5 and 6, from the front, backwards.

The first set of incisors which the horse has, are *temporary*, or "milk" teeth, which are in time replaced by *permanent* ones. The tushes and wolf's teeth are permanent, not being preceded by temporary ones. The first three molars on each side of each jaw are, at first, temporary, being, in due course, replaced by permanent

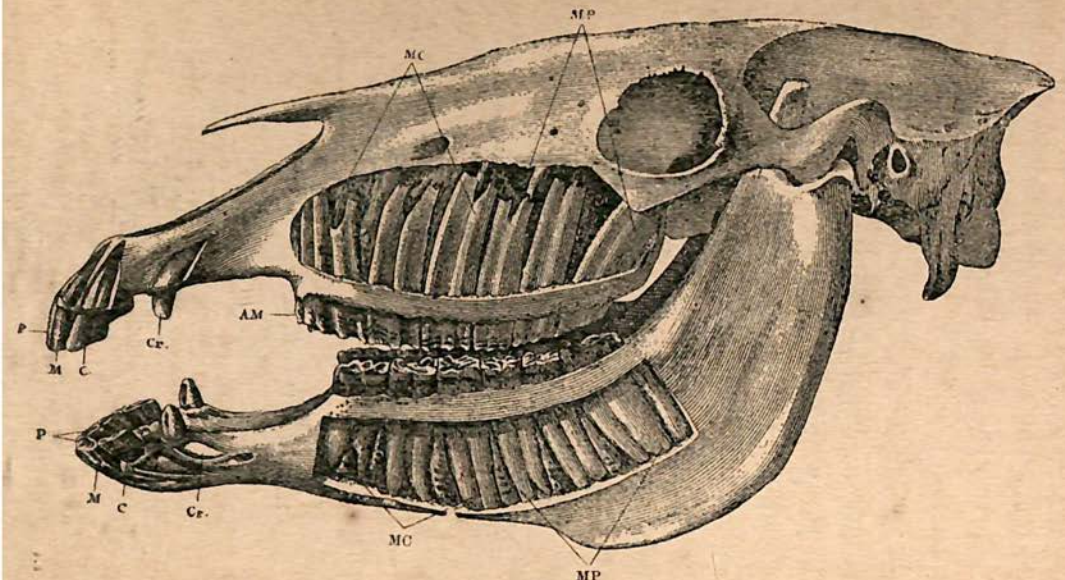

FIG. 6.—*Dentition of the horse.* P, front incisors. M, lateral incisors. C, corner incisors. Cr, tushes. AM, wolf-teeth. MC, pre-molars. MP, back molars.

ones; the last three are permanent, not being preceded by milk teeth. The milk incisors may be distinguished from the permanent ones by their being shorter and whiter; having a better defined "*neck*" (the part of the tooth immediately above the gum); having their exterior surface smooth, while that of the other has, generally, a slight vertical groove; and from the fact that the milk incisors gradually become shorter and shorter, as soon as they come into wear; while the opposite is the case with the permanent ones. With the object of comparing their respective lengths and shapes, we may refer to Figs. 7 and 8.

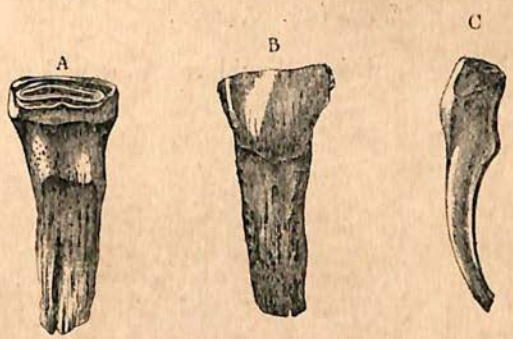

FIG. 7.—*A milk front incisor.* A, rear view. B, front view. C, profile.

I may mention that we may frequently find in the mouths of foals, very small, pointed teeth, where the tushes subsequently appear. Some writers look upon them as rudimentary milk tushes. They are, however, so insignificant in size that we may, practically speaking,

even while conceding this point, regard the canines as permanent teeth. MM. Goubaux and Barrier cite a case

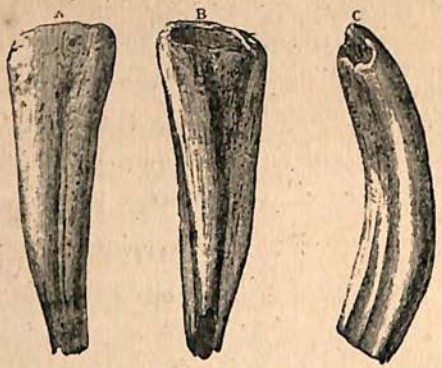

FIG. 8.—*A permanent lower front incisor.* A, front view. B, rear view. C, profile.

of double tushes which they have met with in an ass (see Fig. 9).

FIG. 9.—*A case, in the ass, of double tushes.*

Form of the teeth.—We may see the form of the milk nippers from Fig. 7. The permanent incisors (see

Fig. 8) taper gradually down to the end of the *fang* (the part of the tooth below the gum), when viewed from the front, or from behind; looking at them in profile, they are, if anything, thicker away from the *crown* (the portion of the tooth above the gum), than on it. Hence, the cutting surface, or *table*, which at first is broad from side to side, and narrow from front to rear, becomes in time, as it gets worn down, narrower and narrower from side to side, and broader and broader from front to rear. This is well shown by Fig. 10, and by the plates of the teeth at different ages.

Structure of the teeth.—The body of a tooth (see Fig. 11) is composed of an ivory-like substance called *dentine*, and has a hollow (the *pulp-cavity*) extending from its base up its centre, in which cavity the blood vessels, nerves, the *tooth pulp*, consisting of secreting cells, etc., that are concerned in the nourishment of the tooth, are lodged. The dentine is more or less covered by a layer of white and very hard material termed *enamel*, which furnishes the cutting or grinding surface with which the animal masticates his forage. In the milk incisors (see Fig. 7), the enamel does not extend below the crown. In all the permanent teeth, the enamel covers the greater part of the fang. Over the whole surface of each unused tooth, there is an envelope of *cement*, which is nearly similar in structure to bone. On the upper surface of the incisors the enamel forms a

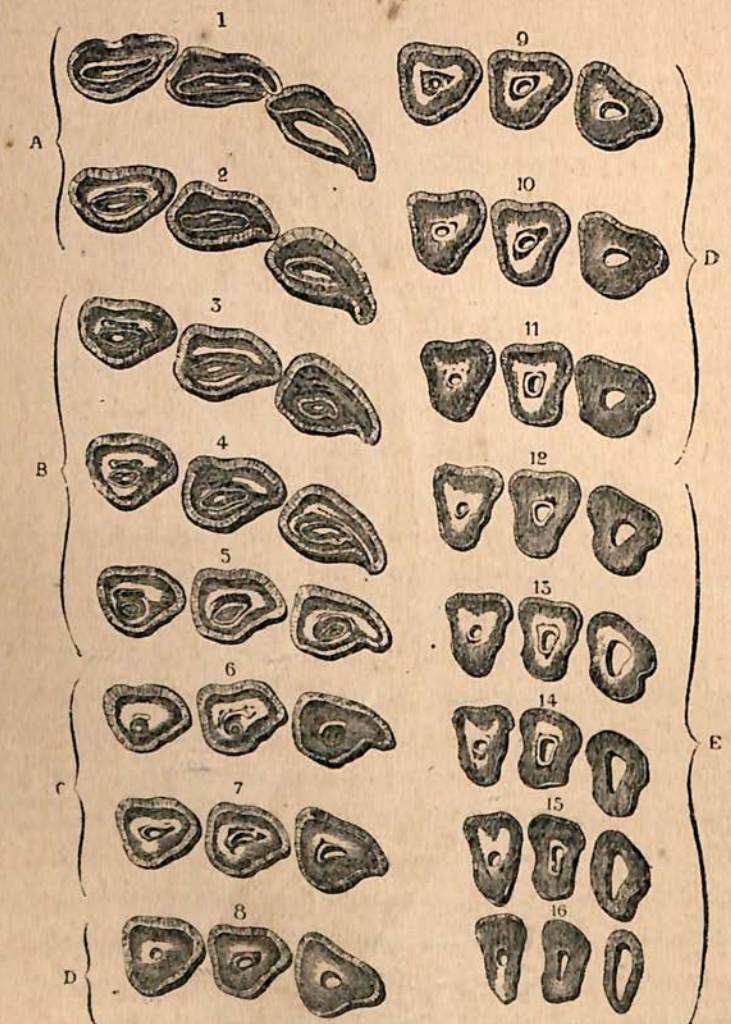

FIG. 10.—*A series of transverse sections on the lower right incisors of a five-year-old horse.* A, narrow from front to rear. B, oval. C, rounded. D, triangular. E, Elongated from front to rear.

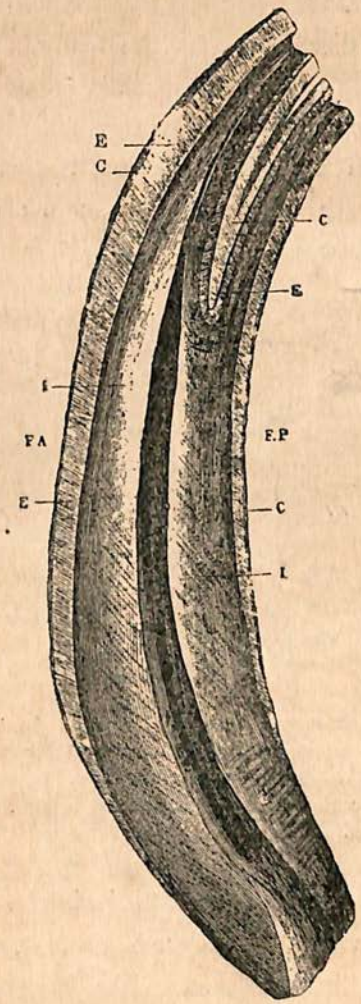

FIG. 11.—*Longitudinal section, from front to rear, of a permanent front incisor of the lower jaw.* FA, anterior face. FP, posterior face. C, cement. E, enamel. I, ivory or dentine.

depression that is more or less filled with cement, which soon becomes discoloured by the food the animal eats. The hole thus made in the tooth is called the "*mark*." As this layer of cement varies from one-tenth to one-half of an inch in thickness, the "mark" wears out in the teeth of some horses, much quicker than it does in those of others. The outer enamel which

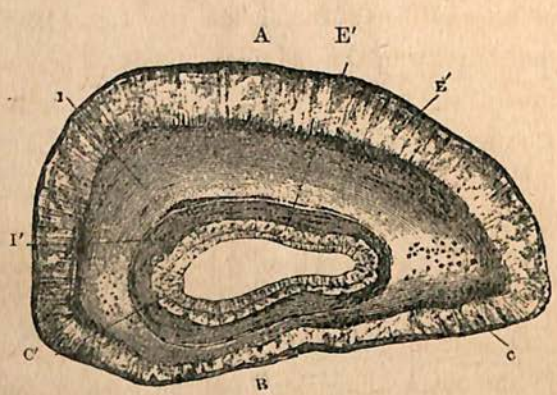

FIG. 12.—*A transverse section of a lower right front incisor*, showing the different layers of the tooth, with their relative thickness (enlarged). A, front face. B, rear face. C, cement. E, outer enamel. E', central enamel. I, external dentine. I', internal and darker coloured dentine.

surrounds the crowns of the teeth is, in the first instance, covered with a very thin layer of cement, which is soon rubbed off. After an incisor has been a short time in use, its *table* (cutting surface) presents two, more or less, irregular rings of enamel (see Fig. 12): the

outer, let us call the *outer enamel;* the inner, the *central enamel.* In the upper back teeth, the central enamel forms two "marks," which are circumscribed by an irregular ring of outer enamel (see Fig. 13). Although the enamel of the back teeth of the lower jaw does not form hollows on the cutting, or, rather, grinding surfaces; "marks" are, however, made by the doubling in of the interior face of the enamel (see Fig. 14).

The pulp-cavity in the incisors extends, at first, above the bottom of the "mark," and between this depression and the outer enamel of the tooth (see Fig. 11). After the tooth has made its appearance, the tooth-pulp commences and continues to secrete a new supply of dentine, which is of a yellow colour and is darker in hue than the original dentine. As soon as the tooth becomes somewhat worn down, the new dentine becomes exposed; the stain thus made on the cutting surface of the incisor, being called the *dental star.*

Changes undergone by the teeth with age.—The chief changes are as follows:

1. Owing to the pulp-cavity being continually filled from behind by new dentine, the teeth are gradually, though slowly, forced out of their sockets. I may remark, that our own teeth remain stationary in length, after they have attained their full size.

2. The milk-teeth become gradually worn down, and are replaced by permanent ones. The permanent in-

FIG. 13.—*View of the upper right molar arch of a horse, six or seven years old* (the first molar is at the top of the figure).

FIG. 14.

cisors (see Fig. 15) push out, from behind, the milk ones, the fangs of which, being squeezed between the jaw and the new teeth, waste away; so that the milk-teeth, usually, readily drop out. They may, however,

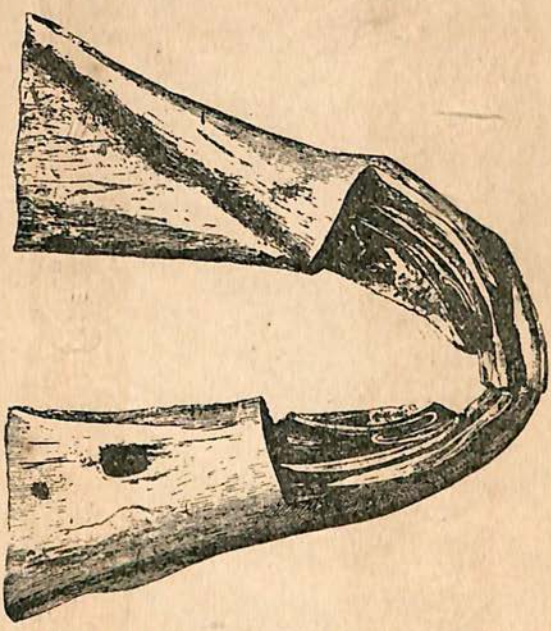

FIG. 15.—*Longitudinal section of the jaws*, showing the respective position of the milk incisors, and of the permanent ones.

remain as a second row in front, and should, in this case, be removed by some suitable instrument.

3. The teeth show wear. The tables of the permanent incisors, as they become rubbed down, change their form in the manner alluded to on page 79, and as illustrated

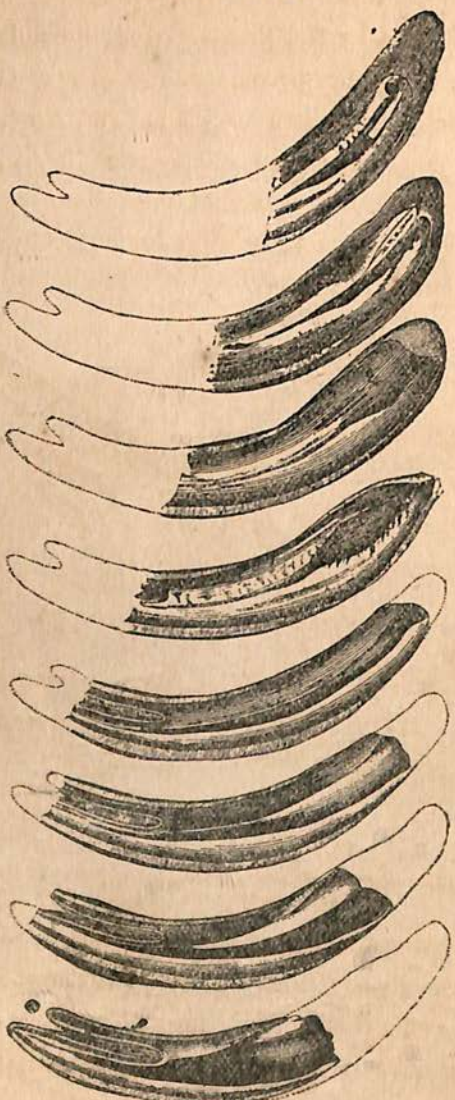

FIG. 16.—*Longitudinal sections, from front to rear, of lower front incisors of horses of* 3, 5, 7, 9, 12, 15, 20, and 25 *years old;* showing: 1st, Growth of the tooth from its root; 2nd, Progressive wear of the tables; 3rd, Length and obliquity according to age; 4th, Obliteration of their pulp cavity; 5th, Deposit of cement about the roots of the teeth.

by Fig. 10, and by the plates giving the different ages. As a rule, the tushes become shorter with age; although we sometimes find them very long, and even with their rearmost edge sharp, in old horses. I cannot satisfactorily explain how it is that these teeth usually wear down so fast. Apparently, they are subjected to only a slight amount of friction.

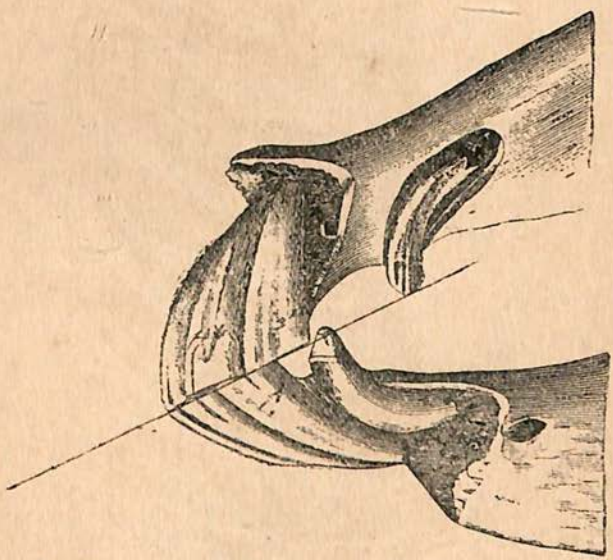

FIG. 17.—*The arches of the incisor teeth exposed*, to show their progressively increasing obliquity.

4. The permanent incisors grow more and more oblique (see Figs. 16 and 17), owing to their shape, and position in the jaws. Their crowns increase in length, on account of their wear not keeping pace with the rate at which the tooth is pushed out of its socket.

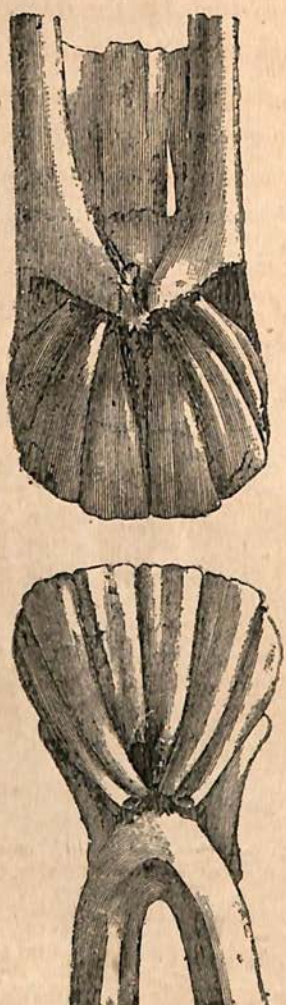

FIG. 18.—*Front view of the incisors of both jaws*, showing the manner in which the teeth radiate outwards.

5. The arch formed by the incisors in each jaw becomes gradually flatter and flatter. At first, when a horse has a "full mouth," the tables of the incisors are so broad from side to side, that the resulting arch becomes as round as practicable, in order to afford room

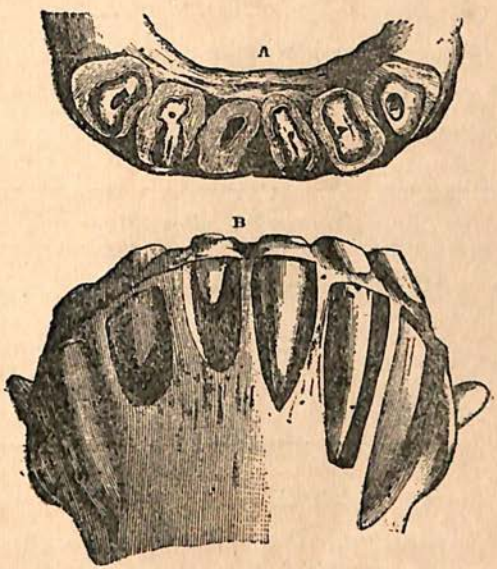

FIG. 19.—*An old mouth*, showing the deposition of cement round the stumps of the teeth.

for the teeth, which, then, more or less radiate outwards (see Fig. 18). As the teeth wear down (see Fig. 19), they obtain more and more room, on account of their becoming narrower from side to side; and the jaw, consequently, "falls in."

6. Owing to the irritation set up, by the movement of

the incisor teeth in their sockets, when they become short with age, the lining membrane (*periosteum*) of the sockets secretes, around the stumps, bone, in the form of cement, which serves to keep these stumps in their place, and to increase the area of their cutting surface (see Fig. 19).

Dates of teething.—I may mention that, as a rule, the incisors of the upper jaw make their appearance sooner than those in the lower jaw. At birth, the front milk incisors show themselves under the gum (see Pl. I.).

Incisors.	Date of eruption through gum.	
Front milk . .	About a week after birth. .	*See* Plate I.
Middle „ . .	30 to 40 days „ „ . .	„ „ II.
Corner „ . .	8 to 10 months „ „ . .	„ „ IV.
Front permanent	2½ years after birth . . .	„ „ VII.
Middle „	3½ „ „ „ . . .	„ „ IX.
Corner „	4½ „ „ „ . . .	„ „ XI.

The time at which the *tushes* make their appearance varies considerably. It may, however, be approximately fixed at four years old.

As there is some divergence of opinion among authorities, as regards the dentition of the *molars*, I shall give, in the following table, the views respectively held by MM. Chauveau and Lecellier. According to the latter, the milk molars of the lower jaw always fall out before their fellows of the upper jaw. I may mention that at, or shortly after birth, the foal has twelve milk

back teeth; namely, three on each side of each jaw. These teeth take up the positions that are subsequently occupied by the 1st, 2nd, and 3rd permanent molars.

Permanent Molars.	Dates according to Chauveau.	Lower Molars.	Upper Molars.	Dates according to Lecellier.
4th	10 to 12 months	4th	4th	10 to 12 months
5th	2 to 2½ years	5th	5th	20 to 24 „
1st & 2nd	2½ years	1st & 2nd	1st	30 to 36 „
3rd	3½ years	6th	6th	32 to 36 „
6th	4 to 5 years	3rd	2nd	40 to 42 „
			3rd	44 to 48 „

Causes which may hasten or retard the appearance of the permanent teeth.—It is generally considered, that thoroughbred horses, and those which are fed from an early age on "hard food," shed their milk-teeth sooner than underbred animals and those that are brought up on green fodder. MM. Toussaint, Goubaux and Barrier are of opinion that neither breed nor food has any influence in this respect. If this be the case, horses differ therein from horned cattle; for a two-year-old Shorthorn which has been highly fed, shows, as a rule, the same "mouth" as an ordinary ox of two-and-a-half years. As the chief function of the incisor teeth is the prehension and division of food that offers a certain amount of resistance to its removal from the place it occupies, or to its entrance into the mouth, it is reasonable to conclude that horses which have to graze on grass of a dry nature, or to

consume forage that requires a good deal of cutting, will wear out their incisors, especially their front and middle ones, quicker than animals that are fed, principally, on corn and "chop," which demand but little aid from the incisor teeth for their prehension and mastication. This conforms to what I have been told concerning the rapid wear of the incisors of horses that are fed, in some districts of America, on sugar-cane as a part of their fodder. M. Bizard and Herr Traeger have remarked that the fact of mares which have milk-teeth, being in foal, considerably delays the fall of these teeth and the appearance of the permanent ones. This period of retardation may extend to a year, or even eighteen months.

The fraudulent practice of extracting certain of the milk incisors, in order to hasten the appearance of the permanent ones, may be successful in its object to an extent of two or three months, at the farthest. It appears that if the operation be performed too long, say, more than six months, before the usual fall of the temporary teeth, the result is not "advanced" in any way; for the resulting wound soon closes up, and leaves a hard cicatrix. To be effectual, it should not be done more than three months before the natural fall of the teeth. In England, we frequently see that it has been performed on four-and-a-half-year-old mouths, in order to make them appear as those of five-year-old animals. The fraud is easily recognised, from the fact that the

front or middle permanent incisors, as the case may be, do not show wear commensurate with the fact of the absence of the milk-teeth that have been removed. Also, the extent of the eruption of the replacing teeth is, often, not sufficient to account for the fall of the milk-teeth which preceded them. Many copers being ignorant that, as a great rule, the upper milk incisors fall out earlier than the lower ones, remove some of the latter only, and thus perpetrate a most transparent fraud.

Dates from which horses are aged.—In England, thoroughbreds take their age from 1st January. Thus, an animal of Stud-Book parentage dropped any time, say, in the year 1887, would remain a *foal* till the 31st December, 1887; would be a *yearling* on the following day, and would remain so up to the 31st December, 1888; and he will be a two-year-old from the 1st January, 1889, to the 31st December, 1889. Horses that are not thoroughbred, take their ages, in England, usually from the 1st May. In Australia, Tasmania, New Zealand, and South Africa, horses are aged from the 1st August. For instance, a colt born, say, in September, 1886, or in March, 1887, will be a two-year-old on the 1st August, 1888. If we want to age a young horse, the actual date of whose birth is unknown to us, we should, in case of doubt, assign to him the younger of the two ages, if his "class birthday" be near at hand; the older of the two, if it be recently past. Thus, suppose an Australian horse had a

"full mouth" (all his incisors permanent) in June, but his corner incisors showed little or no wear, he should, of course, be then aged as a four-year-old, who, two months later, would become a five-year-old. At the worst, we could, here, be only a couple of months out. But if we put him down as five, we should be adding on, at least, nine or ten months to his age. If a colonial animal in, say, September showed the condition of mouth just described, we should age him as five years old; for if we put him down as four, we should be giving our sanction to an animal at least four years and nine months, remaining a four-year-old for another eleven months! In India, Arabs and countrybreds are aged from the 1st January. Here, again, if we had to age in, say, September, an Arab which had his corner and middle milk incisors, it would be right to age him as a three-year-old if there was a doubt as to his retaining the latter until the 1st of the following January.

I may mention that the term *rising* is, as a rule, applied to a horse's age, when it is less than that which is stated; and *off*, when it is more. The former is used when the birthday is comparatively near at hand; the latter, when it has recently past. Thus, a horse "rising five" is a four-year-old which is nearer five, than four. An animal "four off," is a four-year-old that is nearer four, than five.

CHAPTER VII.

IRREGULARITIES OF THE TEETH.

Teeth which retain the mark and central enamel beyond the ordinary time—Irregularities in the respective size of the upper and lower jaws—Irregularities in the number of the incisor teeth—Irregularities in the form of the incisors—Irregularities in the length of the crown of the incisors—Abnormal wear of the teeth from crib-biting—Bishoping.

Teeth which retain the mark and central enamel beyond the ordinary time.—The depth of the dental cavity on the tables of the incisor teeth, varies considerably in different horses, and, even, in particular pairs of teeth, in the same mouth. The thickness of the layer of cement lining these cavities, is, also, as we have seen on page 82, subject to much variation. Hence, it is not at all uncommon to meet with mouths, the "marks" in which indicate that the animal is "younger" than he really is; that he is "younger" on one side of his mouth than on the other; or, that one or more teeth retain these cavities to an unusually late period. The varying hardness of the teeth themselves, and that of the forage, naturally contribute to irregularity in the amount of

wear. In less frequent cases, the marks disappear earlier than the generally accepted time. It is not a very rare occurrence to observe that the mark has disappeared out of the lateral lower incisors in a six-year-old animal. These considerations render the "mark," of itself, anything but a safe guide to the determination of a horse's age. In Plate XXV., we may see the mouth of a nine-year-old horse, whose teeth have retained all their "marks." The roundness of the tables of the lower front incisors, and, to a less degree, of the side ones; the oval appearance of the tables of the corner incisors; the shortness and central position of the dental star; the smallness of the central enamel of the lower front teeth, and its closeness to the posterior edge of the table; the obliquity of the teeth, as viewed in profile; and the flatness of the dental arches, will afford unerring proofs that the animal ought to be "beyond mark of mouth," namely, over eight years.

Retention, for an unduly long period, of the apex of the cone of the central enamel of the permanent incisors, gives a false appearance of comparative youth to the mouths of some horses, as may be seen from Plate XXVI. This, of course, occurs only after the cavity (or "mark") has disappeared; and is due to the fact of the solid apex of the cone of enamel being deeper than usual; to the hardness of the teeth themselves; or, to some extent, to the soft nature of the food. The form and degree of

obliquity of the incisors, and the position and extent of the dental star, will serve as guides from which to draw correct deductions as to the age. Judging only from the appearance of the central enamel, the mouth represented in Plate XXVI. would not be more than one of ten years.

Irregularities in the respective size of the upper and lower jaws.—It is not a very rare occurrence to find the lower jaw slightly in advance of the upper one. MM. Goubaux and Barrier mention the case of a five-year-old cart-horse which was thus "*under-hung*" to an extent of more than two-fifths of an inch. I have seen in a mule, and, also, in a horse, this peculiarity existing to such an extent, that the lower centre incisors almost completely hid from view the upper front nippers. The posterior aspect of the former were, naturally, a good deal worn away, by friction with the anterior face of the latter. This, and the opposite peculiarity, render difficult an exact determination of the age.

In some instances, the arch of the upper jaw, being greater than that of the lower one, overlaps it all round. In a "*parrot-mouth*"—a condition which we shall consider later on—the difference is chiefly marked by the fact of the upper front incisors being in advance of the lower ones. The upper incisors far more frequently project beyond the lower ones, than *vice versâ*.

Irregularities in the number of the incisor teeth.—We

sometimes find, especially in the upper jaw, an abnormally large number of permanent incisor teeth in the same mouth. In such cases, they form a more or less complete second row to the ordinary teeth, and follow the same method of dentition, being either front, middle, or corner incisors. They are entirely different from the stumps of milk-teeth that are sometimes retained. They are inserted, more or less, firmly in the jaw, and interfere, to a greater or less degree, with the ordinary teeth. The existence of complete double rows of permanent incisors in both jaws—making twenty-four in all—have been noted in two or three instances.

In Fig. 20, we have both front incisors, and one middle incisor, double.

FIG. 20.—*Supernumerary incisors.*—*aa*, two front, *b*, one middle.

In Fig. 21, both middle incisors are double.

FIG. 21.

In Fig. 22, we have a front and back view of a mouth with a middle permanent supernumerary incisor, lying across the jaw.

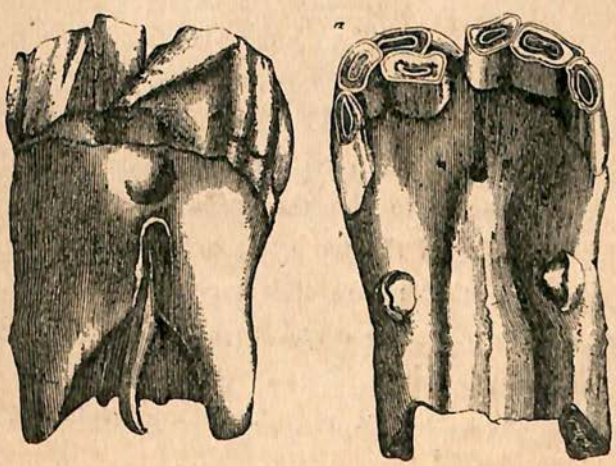

FIG. 22.

Irregularities in the form of the incisor teeth.—In some rare cases, "the incisors of the lower jaw have a well-marked triangular form, nearly the same as may be observed at the age of fourteen or fifteen. The presence of the central enamel in all the lower incisors, will guard us from being deceived by this extraordinary triangularity of shape" (*M. Girard*).

FIG. 23.

Fig. 23 shows a double upper middle incisor united in such a manner as to give the appearance of a single tooth. The size of the tooth, the existence of a longitudinal ridge that marks the line of union, and the presence of two complete and separate dental cavities, show that it is double.

In Fig. 24, as is not very uncommon, some of the incisors are *fissured*.

Two of the incisors in Fig. 25 have two dental cavities each.

Irregularities in the length of the crowns of the incisor teeth.—M. Girard states that, as a rule, the crowns of the

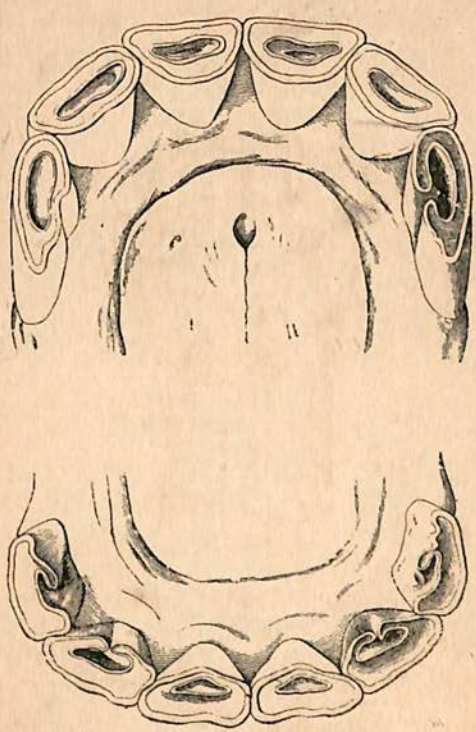

Fig. 24.

front incisors, measuring from the gum to the table, are about ·70 inches long; the middle ones, ·59 inches; and the corner, ·51 inches. Pessina (*Sul modo di conoscere dai*

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denti lètà dei cavelli) asserts that the annual wear of the incisors of common-bred horses is about ·17 inches; that of thoroughbreds, ·12 inches.

In some horses, the incisors of different sides of each jaw are, respectively, of different lengths. Thus, the lower left incisors may be longer than their fellows on

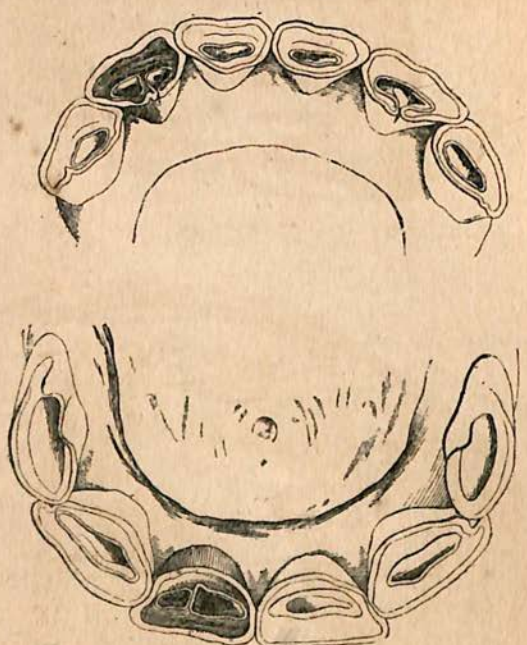


Fig. 25.

the right side of the mouth. In this case, the upper left incisors will be shorter than the right ones of the same jaw. The lower incisors will, therefore, make the animal

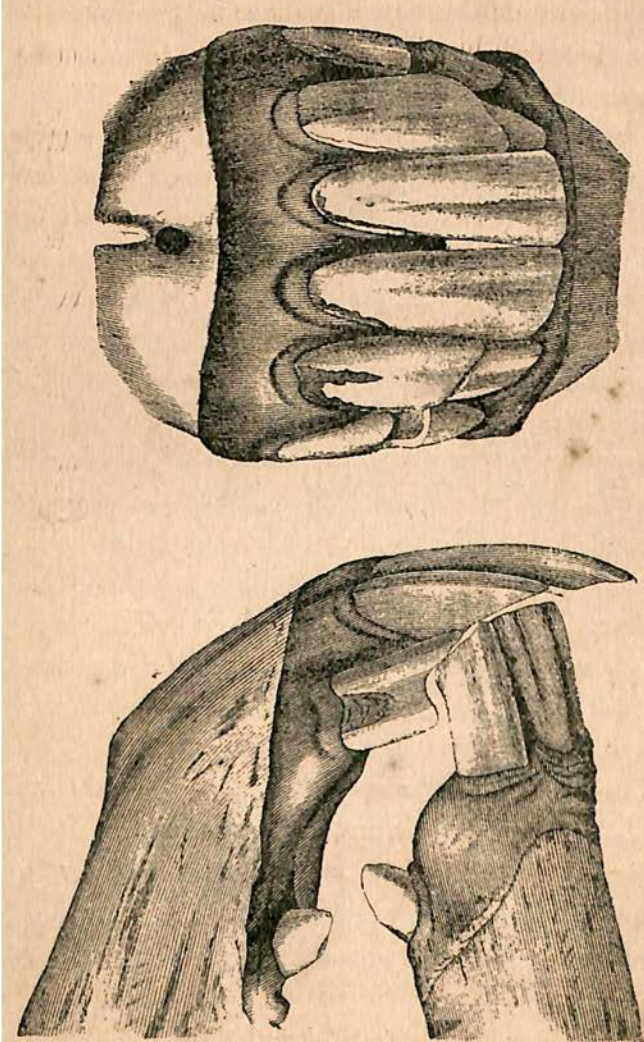


FIG. 26.

appear younger on the near side than he really is, and older on the off side. In such instances we should take the mean of the ages shown.

The incisors of some animals are abnormally long in both jaws. In such cases, the teeth meet at an unusually acute angle, and have a marked outward divergence. In order to arrive at a close approximation of the age, which is here somewhat difficult, we should imagine the teeth to be cut down to their normal length. It would generally be judicious, on the part of the owner, to have this actually done to such teeth.

Although we see, as a rule, "*parrot-mouth*" only in old horses, still it is common enough to observe, in five- or six-year-old animals, that the upper front incisors project a little beyond the lower ones, while the posterior edges of the teeth are in juxtaposition. It is possible that animals possessing this peculiarity become, finally, parrot-mouthed with advancing age. In this aggravated condition (see Fig. 26), the upper front incisors overlap their fellows in the lower jaw, considerably more than do the other teeth; the upper corner ones, least of all.

Surgical interference is almost always called for in well-marked cases of parrot-mouth; as this condition greatly affects the animal's power of grasping and cutting his food.

Abnormal wear of the teeth from crib-biting.—Many horses, from irritability on being handled, though free

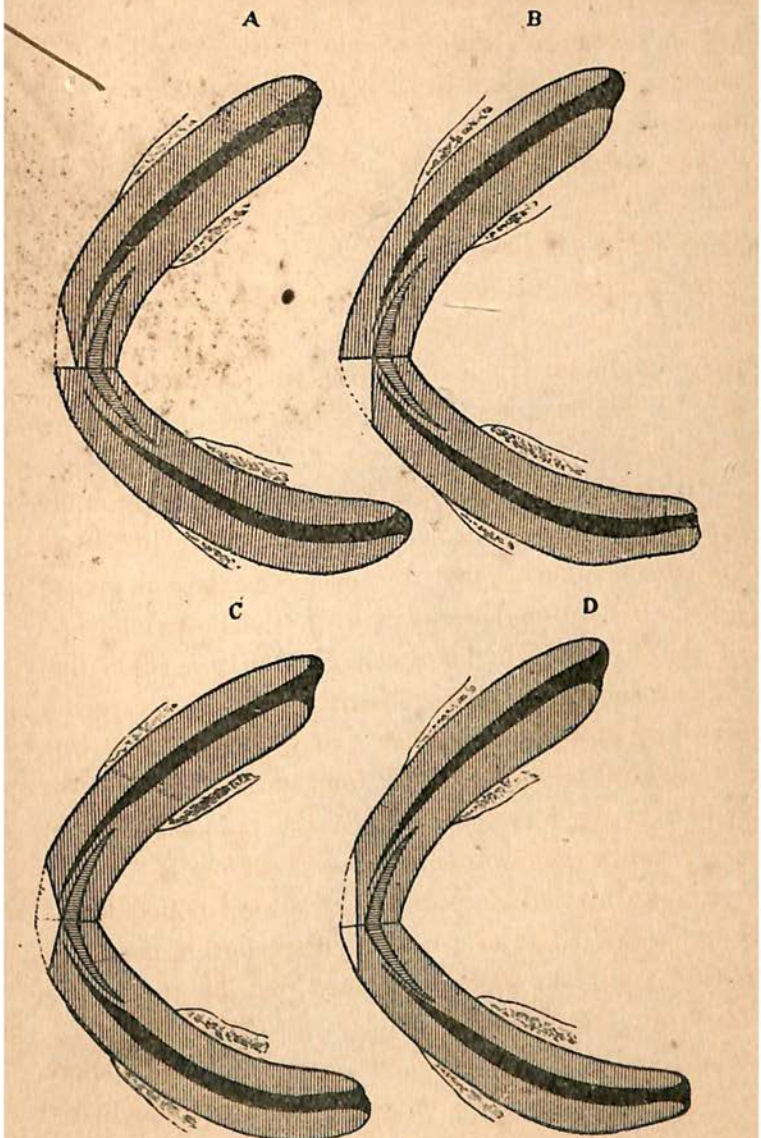


FIG. 27.

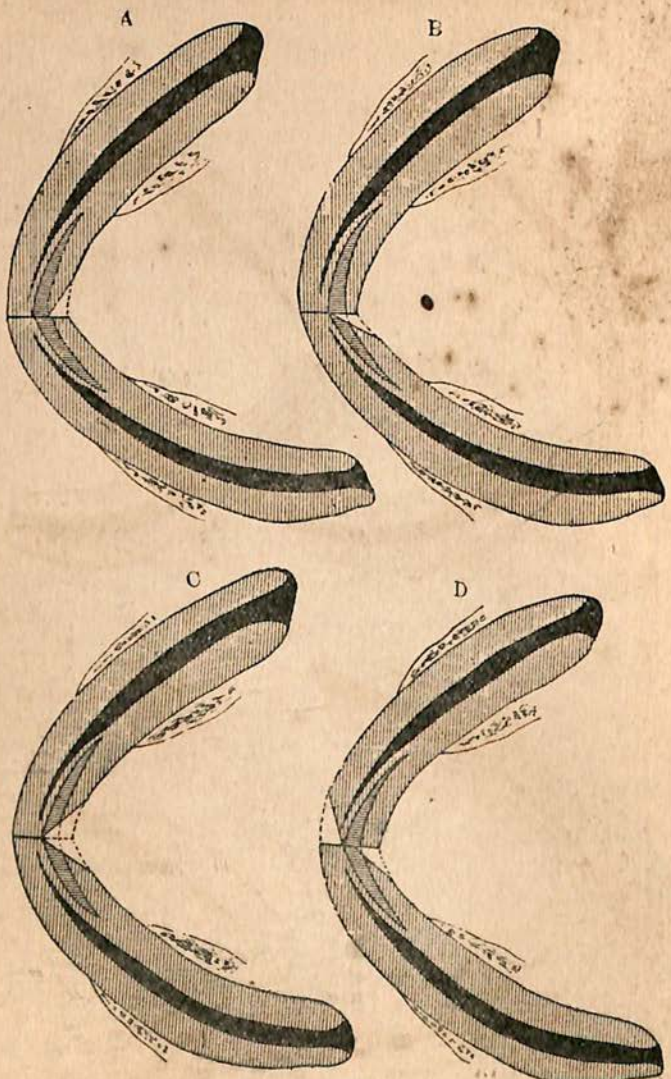


FIG. 28.

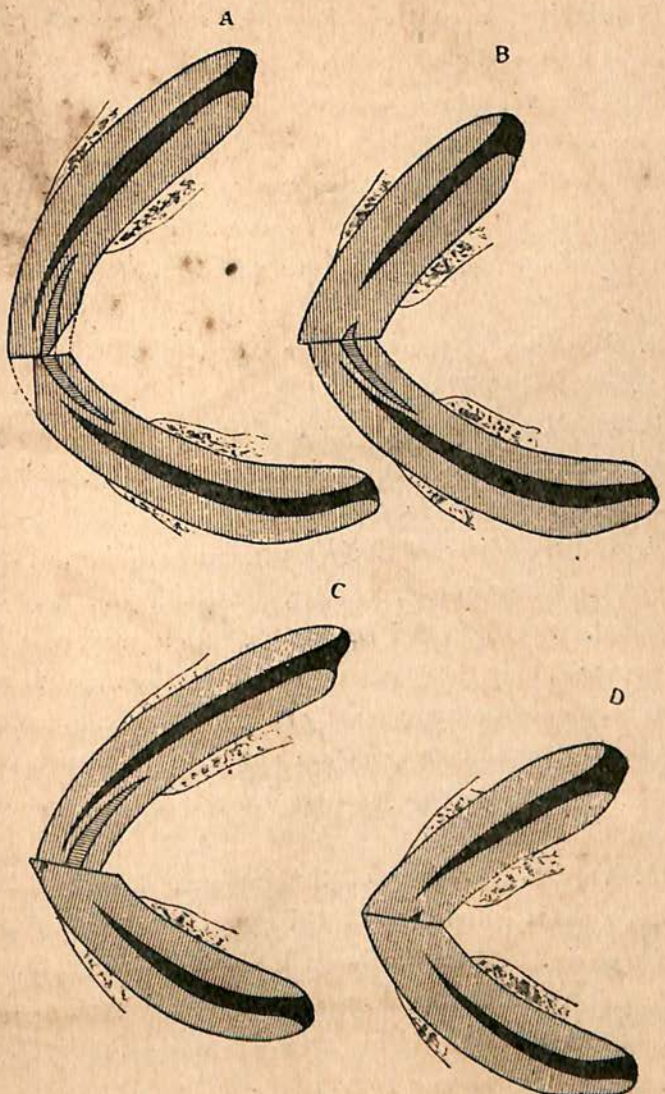


FIG. 29.

from cribbing, wear their teeth, to some extent, like animals possessed of that vice.

The chief varieties of wear of the teeth from cribbing are as follows :—

1. Bevelling of the anterior edges of the incisors, varieties of which may be seen in Fig. 27. Here the wear is chiefly confined to the front and middle teeth.

2. Bevelling of the posterior edges of the incisors. See A, B, and C, Fig. 28.

3. Bevelling of the anterior and, at the same time, of the posterior edges of the incisors. See D, Fig. 28, and A, Fig. 29.

4. Wear, causing shortening, without bevelling, of the incisors. Those of one, or other, or of both jaws may be affected. See B, C, and D, Fig. 29. As a great rule, in these cases, only the front and middle incisors are worn. Hence, the observer may readily recognise the irregularity, by noting that these teeth are not on a level with the corner ones, when both jaws are brought together and a front view taken.

5. Vertical grooving of the incisors. See Fig. 30. This wear is generally effected by friction against the rack chain. When the horse wears a groove between one pair of incisors, so deep as to hurt his gum, in the event of his practising his favourite vice in it, he tries another pair of incisors ; and so on.

It is almost needless to say that all these forms of wear greatly complicate the question of age.

"*Bishoping.*"—The "artistic" method of performing this fraudulent operation, which has for its object the giving of a false appearance of youth to an old horse (See Pl. XXVII.), is described as follows by MM. Goubaux and Barrier:—"The horse is attached by a strong rope, or chain, fixed on a level with the ground. The jaws are kept apart by a thick billet of wood. Sometimes, on

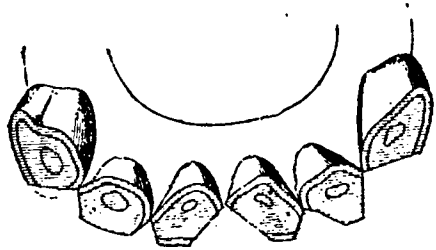


Fig. 30.

commencing, the tables of both the upper and lower incisors are filed flat. A small transverse cavity is then made with a fine gouge in the lower side and corner incisors, but not in those of the upper jaw. The excavations, so as to give the appearance of the 'mark,' are coloured black, generally, with nitrate of silver. On some occasions, the tushes are touched up with the file, so as to render them more pointed, and to give them back the sharp inside edge which they had lost."

The fact of an animal's teeth having been bishoped, may be recognised by the following means:—

1. When the jaws are brought together, and the incisors are viewed from the front, these teeth may not all be on the same level.

2. Traces of the file may be left on the teeth.

3. The form of the cavities will not correspond with that of the tables.

4. The artificial cavity will not be surrounded by central enamel, which, by reason of its being harder than the dentine, will, in the natural tooth, stand up in relief on its table.

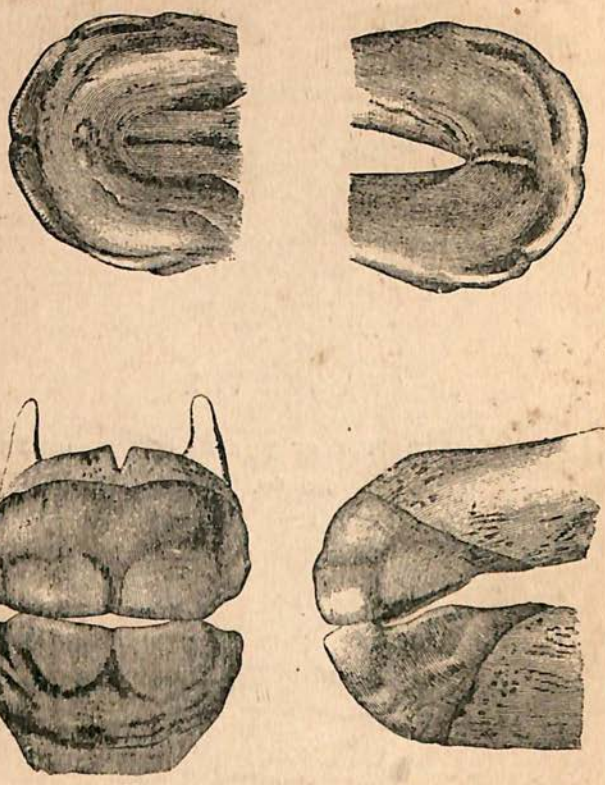
A fraudulent seller, when showing a bishoped mouth, will generally endeavour to have the incisors covered by a plentiful supply of saliva.

CHAPTER VIII.

PLATES ILLUSTRATIVE OF THE DENTITION OF THE HORSE.

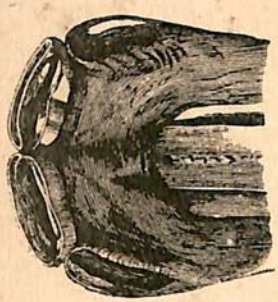
LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY.

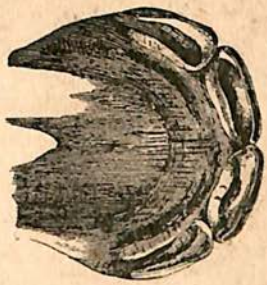
PLATE I.—AT BIRTH.

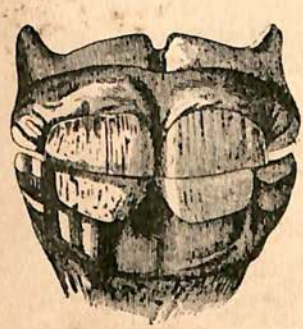


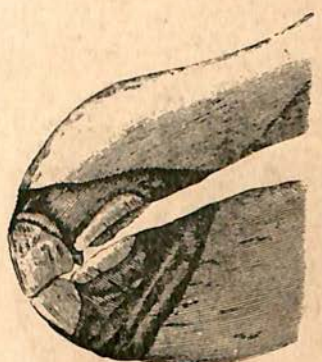
The front milk incisors can be clearly seen under the mucous membrane; the middle ones, less plainly.

PLATE II.—ONE MONTH.



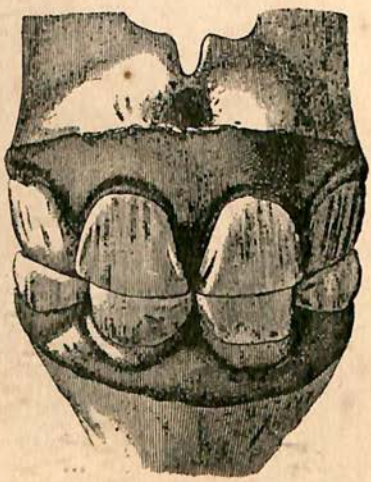




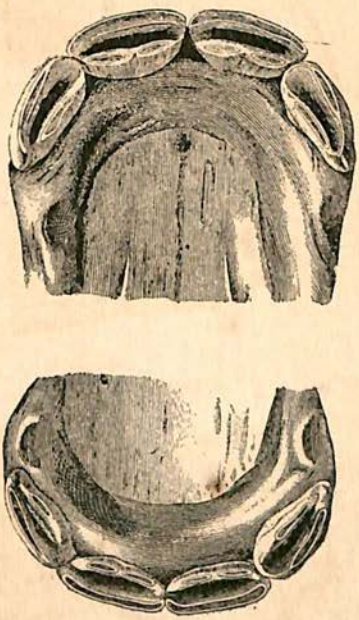


The front milk incisors are, now, well through the gum; those of the upper jaw being in contact with those of the lower. The middle incisors are making their appearance.

PLATE III.—FIVE MONTHS.

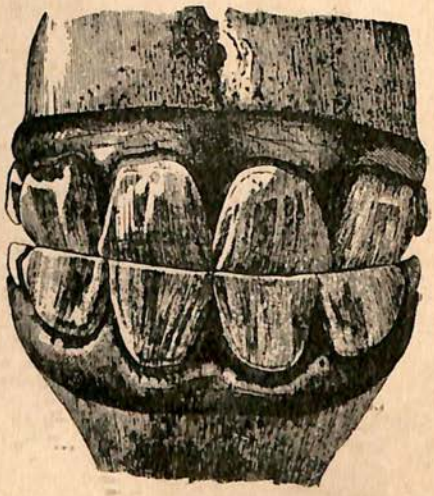


FIVE MONTHS.

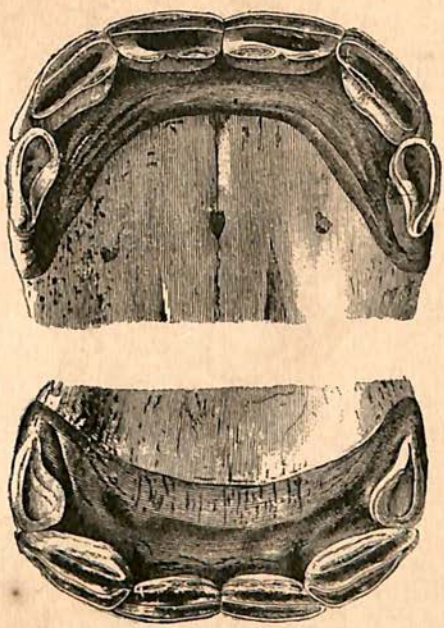


The upper and lower middle incisors are in contact. The corner incisors may be felt under the mucous membrane, ready to come through.

PLATE IV.—ONE YEAR.

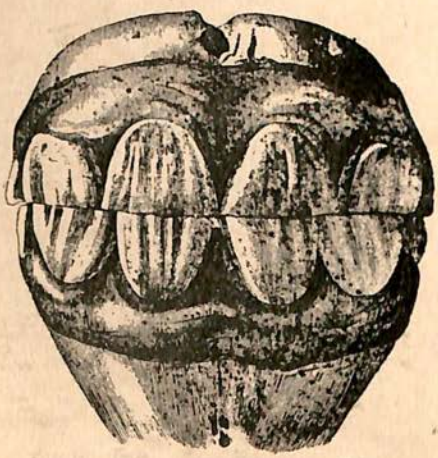


ONE YEAR.

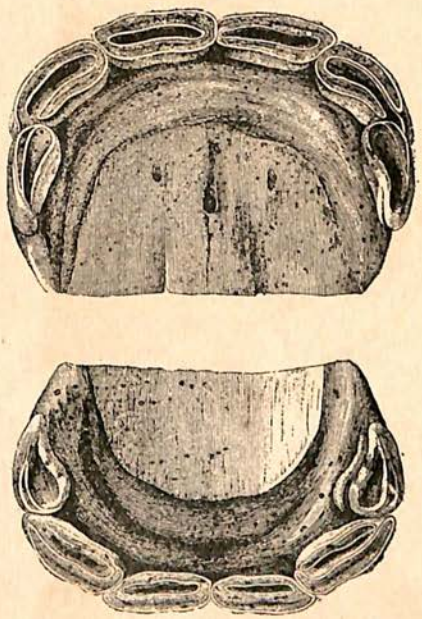


The corner incisors which made their appearance at about nine months, do not, yet, touch each other. The anterior edge of the tables of the front and middle incisors, usually, show the dental star, in the form of a long, yellow, transverse line. As a rule, the posterior edges of these teeth, in the upper jaw, show but little wear.

PLATE V.—SIXTEEN MONTHS.

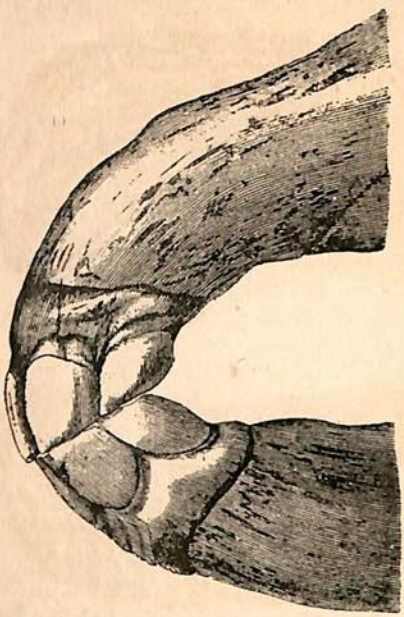


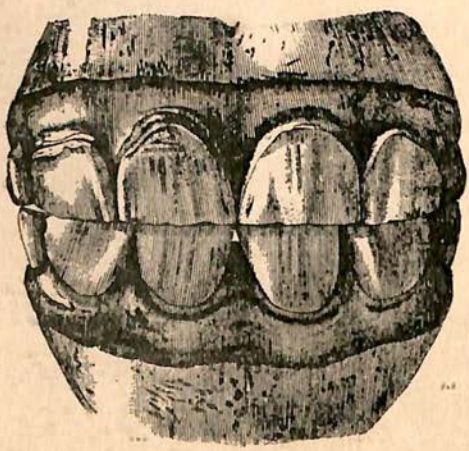
SIXTEEN MONTHS.



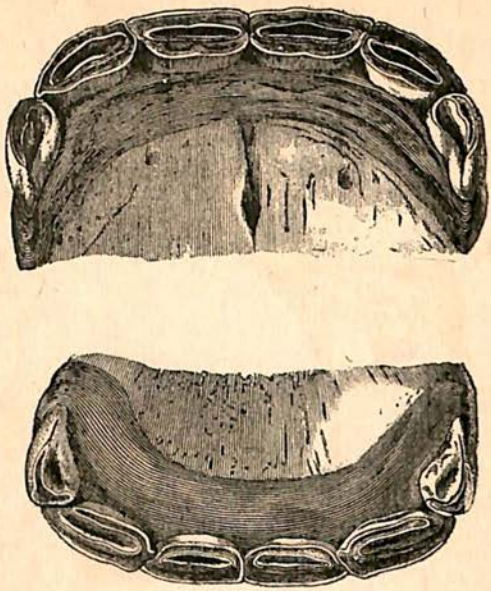
The incisors of both jaws are in contact. On the tables of the front incisors, the central enamel forms a complete ring. The corner incisors have come, slightly, into wear.

PLATE VI.—TWO YEARS.





TWO YEARS.



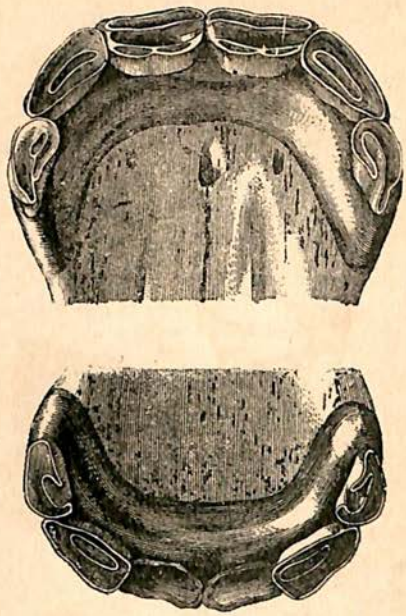
The above is the mouth of an underbred two-year-old which has been fed on soft food, and whose teeth are, consequently, not much worn. The central enamel in the middle incisors of the upper jaw, now forms a complete ring. It, also, as a rule, does so in those of the lower jaw. These rings of enamel may be seen complete in the front and middle incisors of advanced animals of not more than twenty months old ; but, in their case, the front incisors will not be "started" by their replacing teeth, as may be seen in a two-year-old mouth.

ABOUT TWO AND A HALF YEARS.

The front milk incisors—commencing, usually, in the upper jaw—fall out, one by one, and are replaced by permanent teeth ; the period occupied in this process, varies from six weeks to two months.

PLATE VII.—RISING THREE.

RISING THREE.

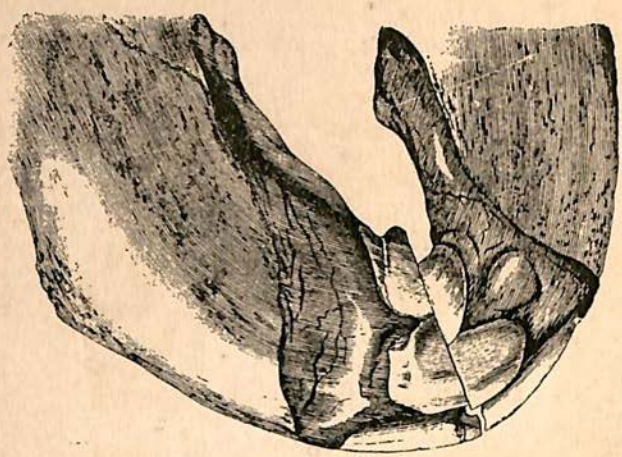


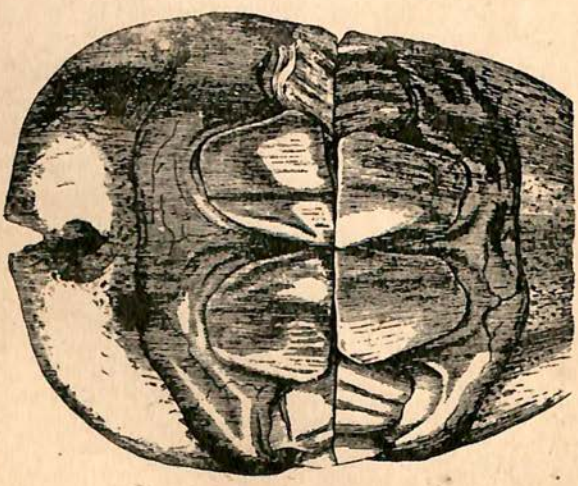
The front permanent incisors are through the gum; but they do not touch each other. The upper front incisors show wear, especially, on their anterior border; on account of their having been in contact with the lower front milk-teeth, for some months, before the latter fell out. They are nearly on a level with the middle milk incisors of the same jaw. The external border of the corner milk incisors is well in wear.

THREE YEARS.

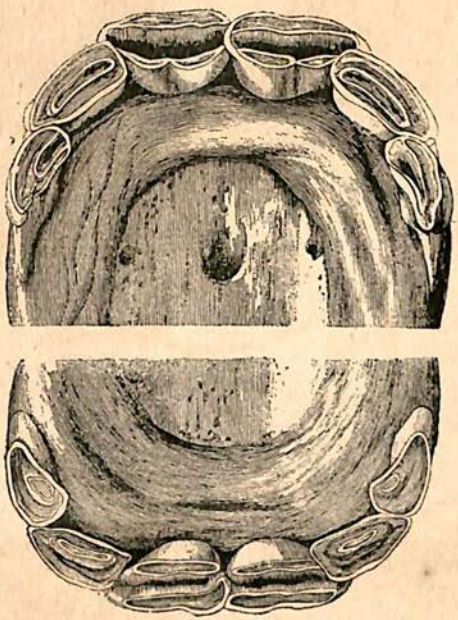
The four permanent incisors are, nearly, on a level with each other.

PLATE VIII.—THREE OFF.



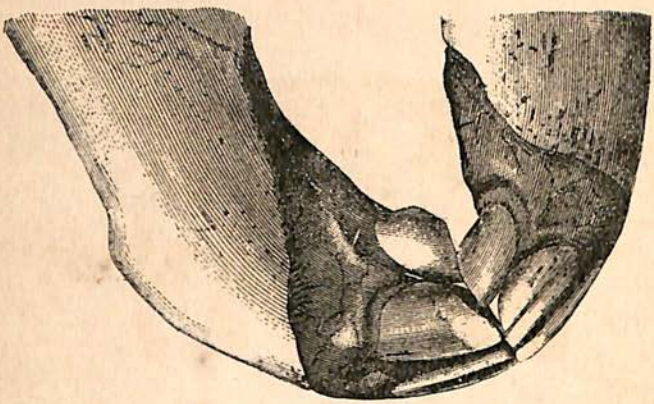


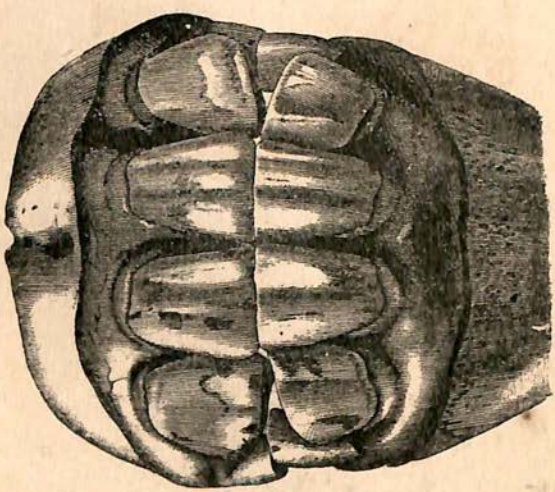
THREE OFF.



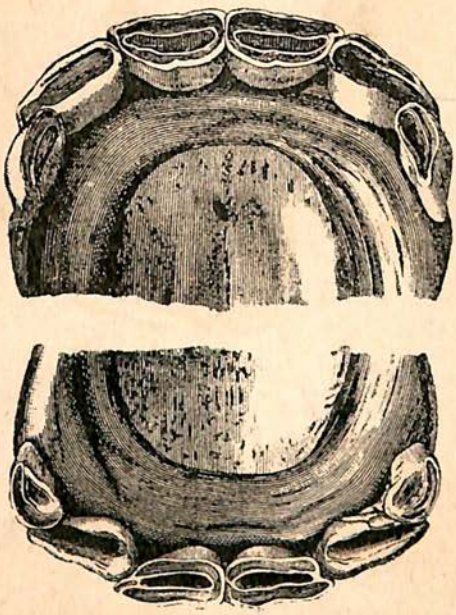
Although the front permanent incisors are in wear, the cavities on their tables are not, yet, completely surrounded by central enamel; nor are their tables, as viewed from the front, quite on a level with each other. The hold on the gum of the middle milk incisor is much loosened. Sometimes, one of these teeth is ready to fall out.

PLATE IX.—RISING FOUR.



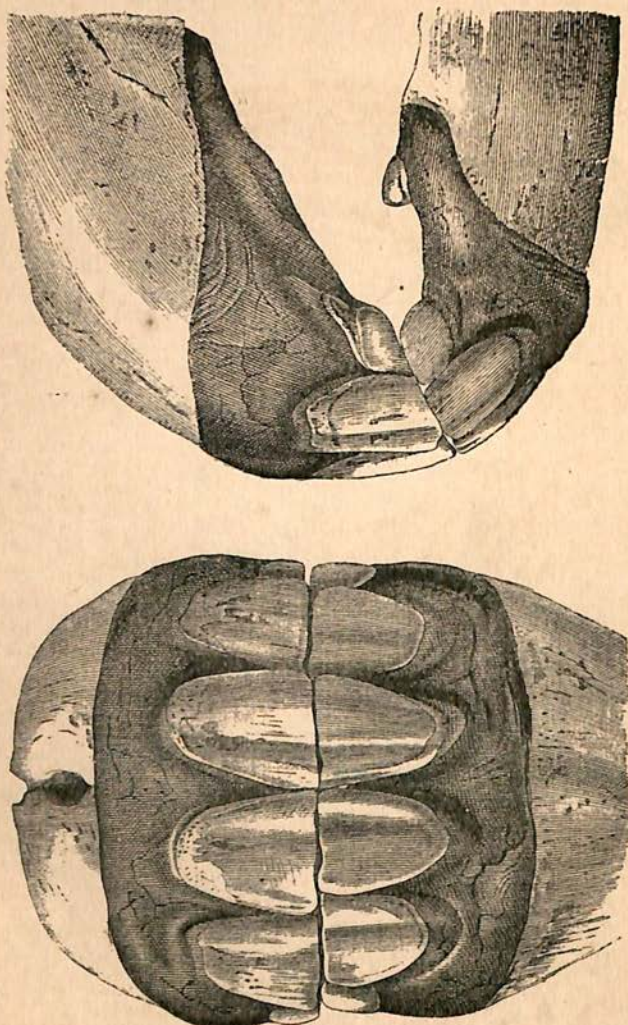


RISING FOUR.

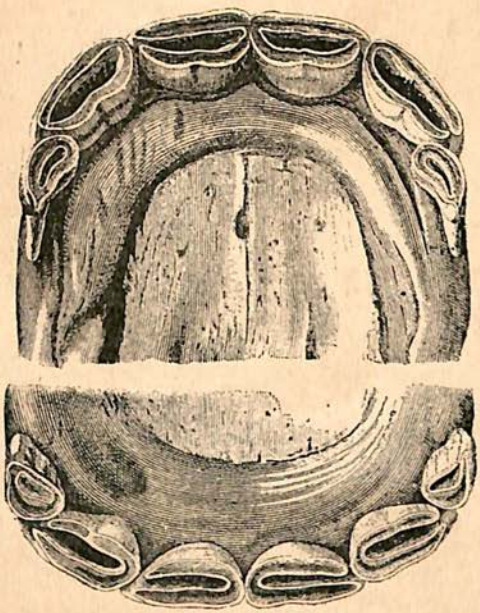


The middle milk-teeth fall out and are replaced by permanent ones, which, not being, yet, on a level with the front ones, are quite unworn. The tables of the front incisors, especially those of the upper jaw, are well in wear; and their cavities are completely surrounded by central enamel. The corner milk-teeth are a good deal loosened at their bases.

PLATE X.—FOUR YEARS

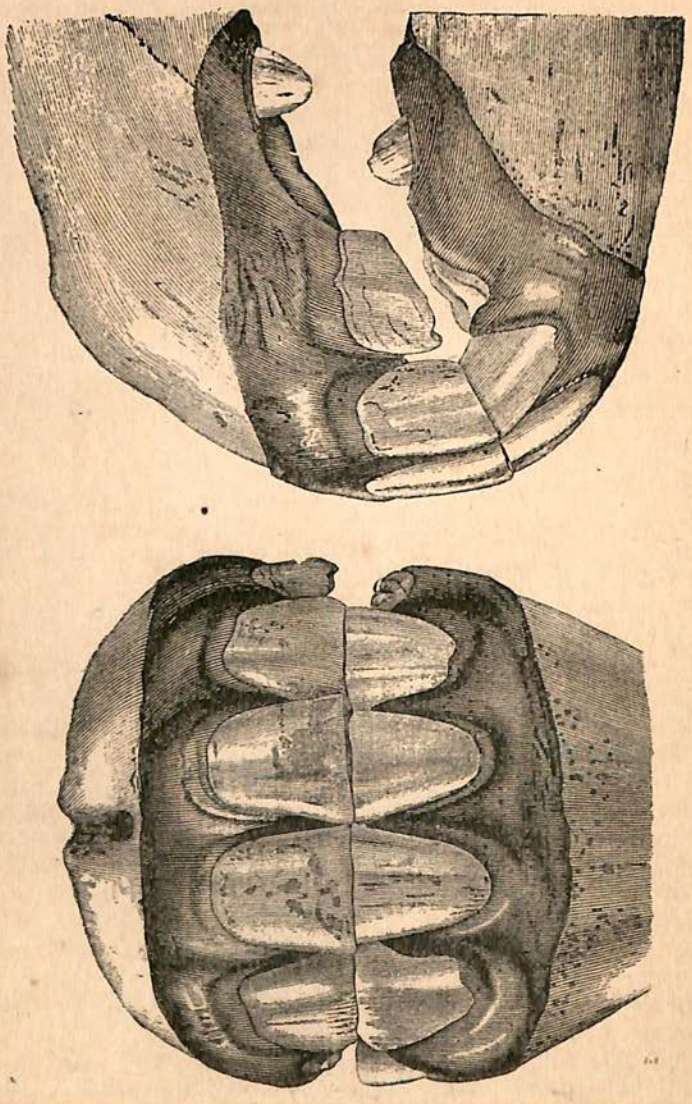


FOUR YEARS.

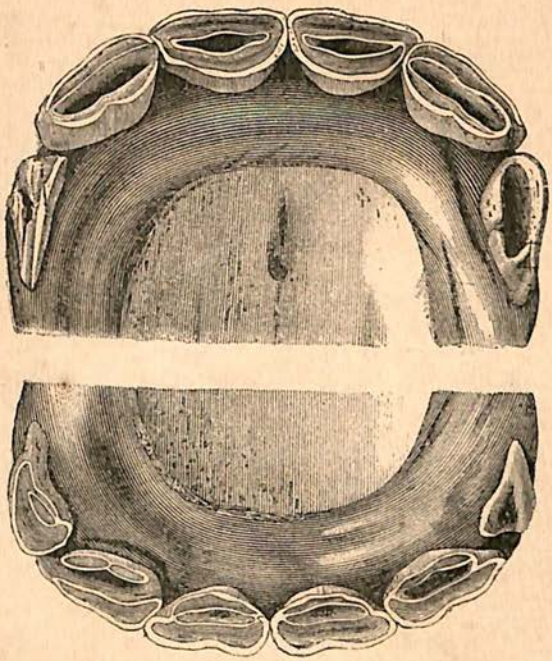


The eight permanent incisor teeth are, now, all in contact, respectively, with their fellows, and are on the same level. The middle incisors are well in wear; although the cavity on their tables is not always completely surrounded by the central enamel. Often, the cavity has disappeared out of the tables on the lower front incisors, especially, in the case of thoroughbreds. The corner milk-teeth are well worn down; the upper ones being ready to be pushed out. The tushes, as a rule, begin to show through the gum.

PLATE XI.—FOUR OFF

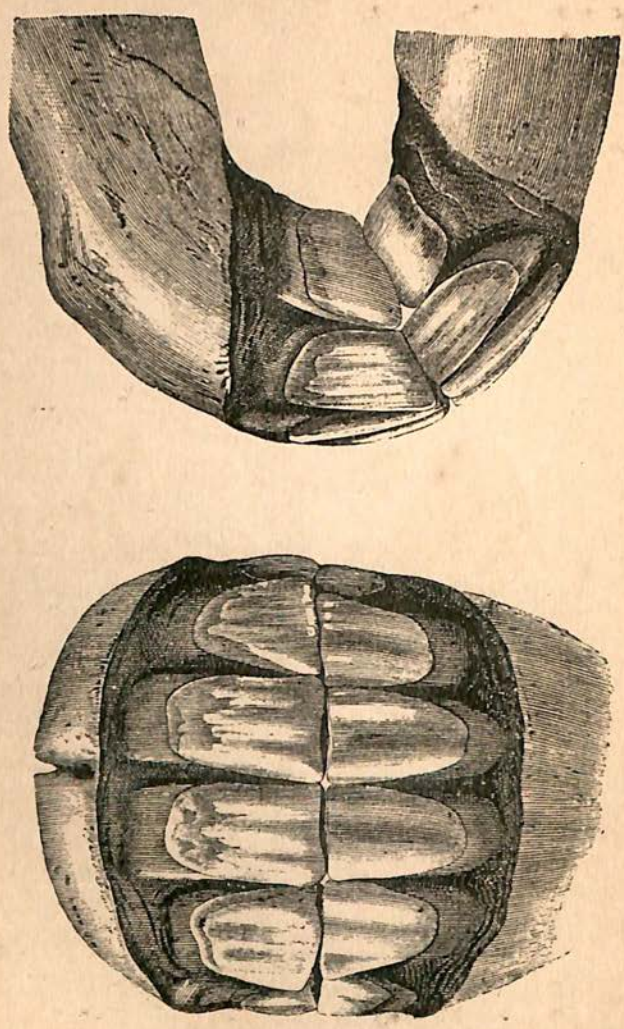


FOUR OFF

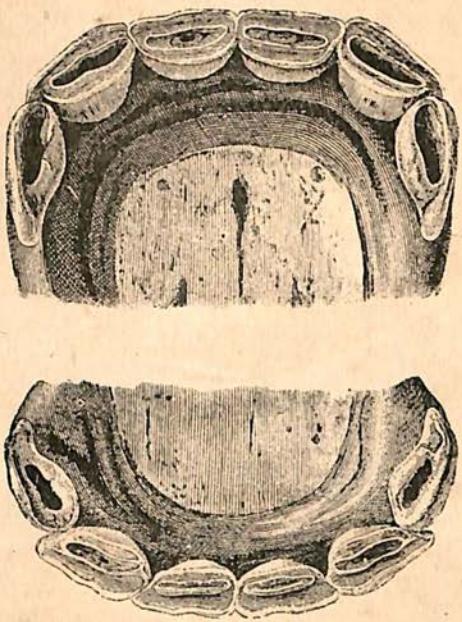


At this age, we have the successive fall of the corner milk-teeth, which, if they do remain in, appear as small stumps ready to drop out. In this particular case, the corner milk incisors of the near side have fallen out; while those of the off side, especially the upper one, will soon follow their example. This would be a mouth of about four years and two months. The corner permanent incisors of the near side do not touch. Viewed from the front, the front and middle incisors are all on a level with each other. The central enamel is isolated on the tables of the upper front incisors, and, nearly so, in those of the lower jaw. "At this period, we may frequently mark anomalies in the eruption of the teeth. In fact, it is not rare to see the side and corner teeth come out at the same time. The animal is, then, four and a half, or, even, only four years old, although he looks like five" (M. Yvon, V.S. Bayeux).

PLATE XII.—RISING FIVE.

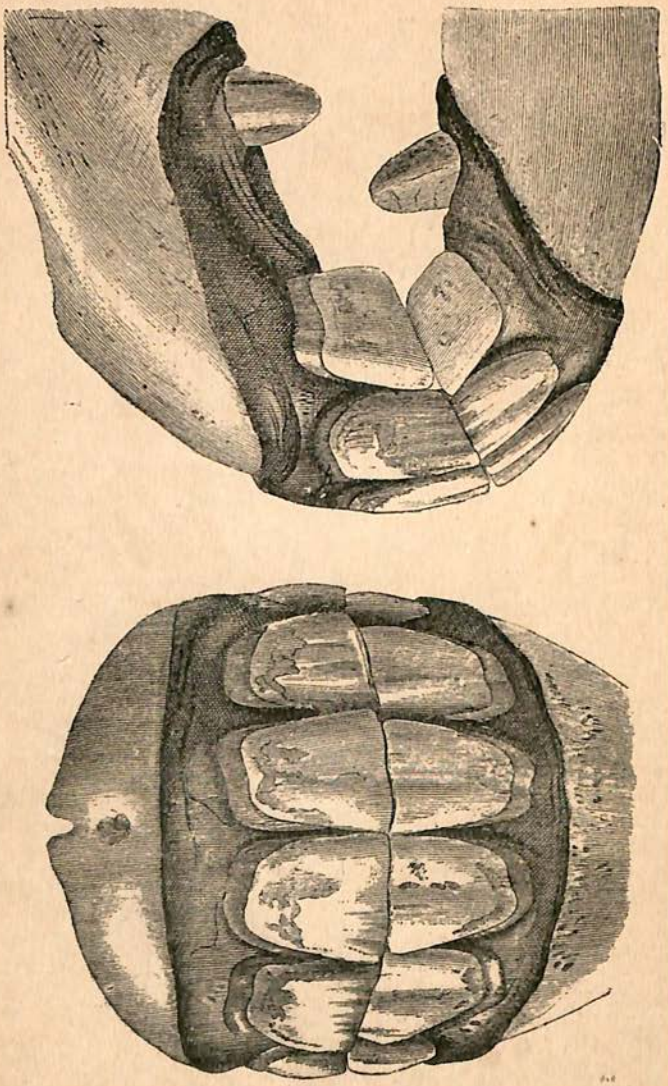


RISING FIVE

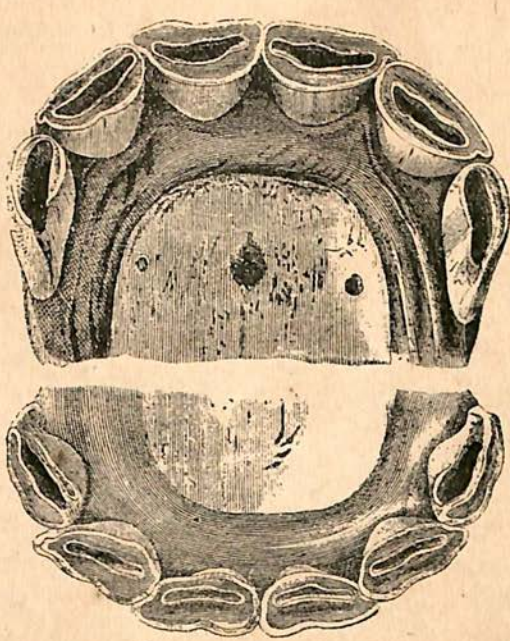


Although the corner milk-teeth have fallen out, the permanent ones are not, yet, on a level with the front and side incisors, and, consequently, show no wear. The rings of central enamel are isolated in the tables of the front and middle incisors of the upper jaw, and, nearly so, in the lower middle incisors, which are, now, well in wear.

PLATE XIII.—FIVE YEARS.

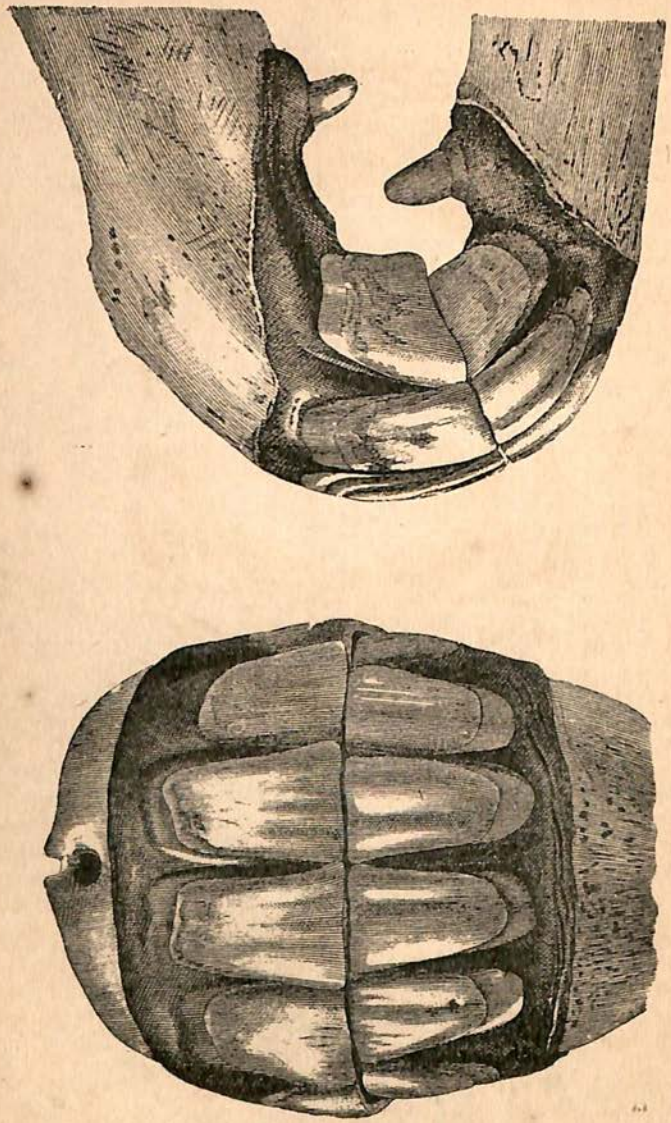


FIVE YEARS.

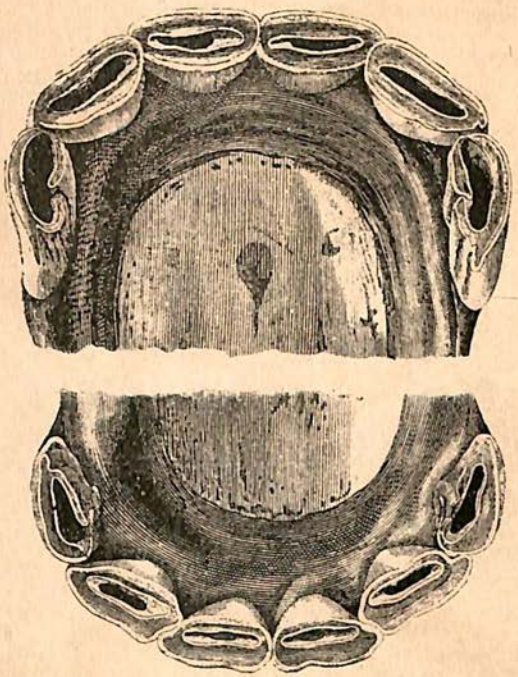


The horse has, now, a "full mouth." The incisors are all on a level with each other; although the posterior edges of the corner ones have not yet come into use. The anterior edges of these teeth are slightly worn. The central enamel of the front and middle incisors forms complete rings. The tushes are through the gum. The arches formed by the incisors of both jaws are nearly semi-circular.

PLATE XIV.—SIX YEARS.

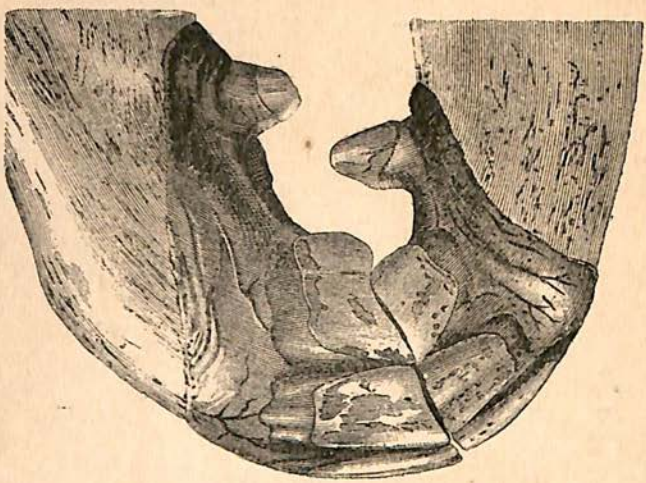


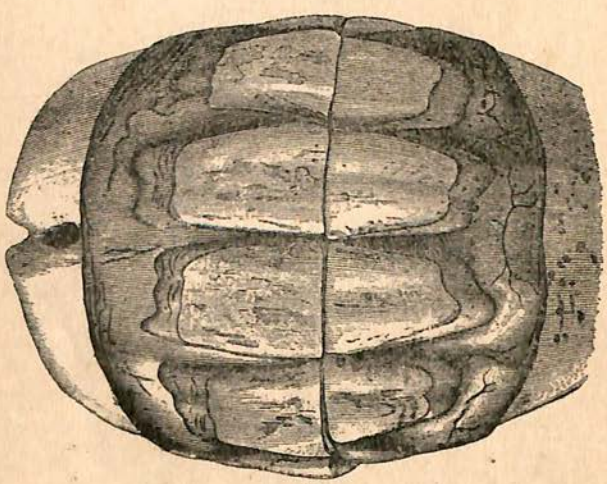
SIX YEARS.

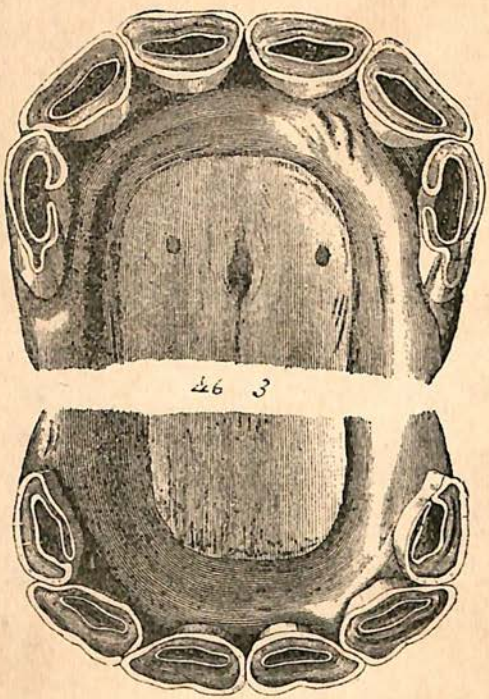


The cutting surface of the posterior border of the corner incisors is worn flat with the remainder of the tooth; its central enamel forming a complete ring. The tables of the front incisors tend to assume an oval form. Those of the lower front incisors are, as a rule, worn level; the dental cavity having disappeared out of them; and, in some cases, out of the lower middle incisors. The front incisors, viewed from the front, are slightly whiter than at five years old, on account of their beginning to lose their coating of cement. In this example, the upper corner incisors are irregularly formed, being fissured on their inner side.

PLATE XV.—SEVEN YEARS.

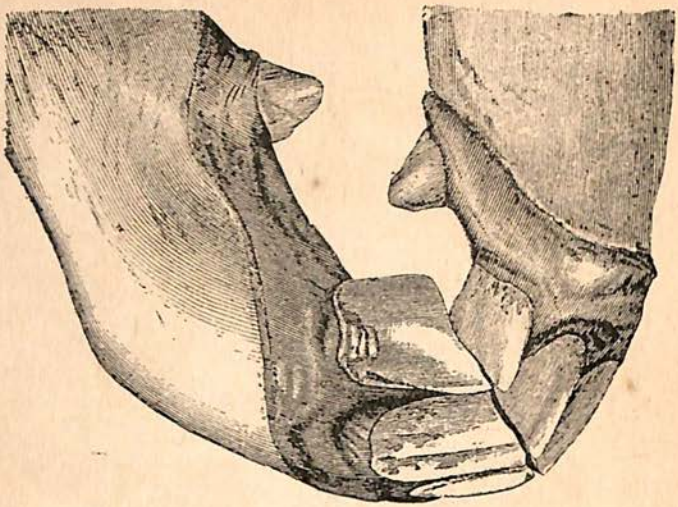


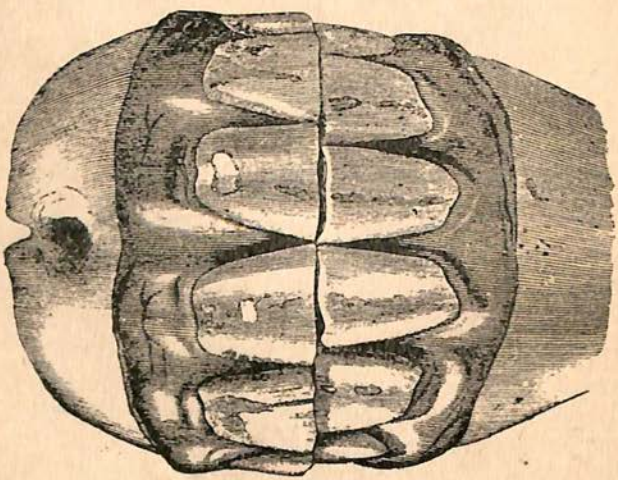




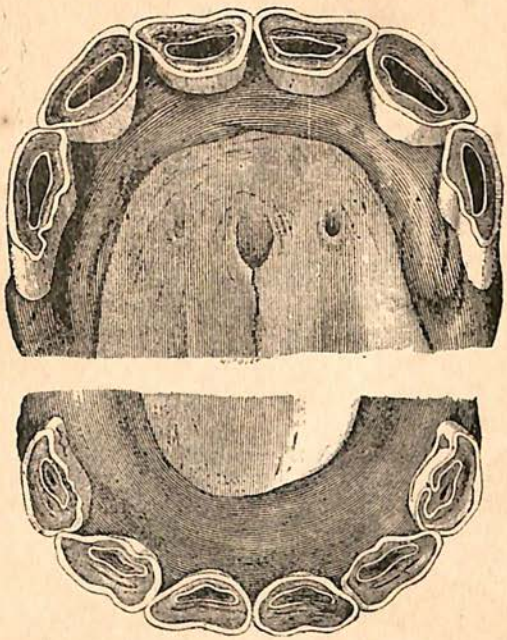
The cavity is worn out of the lower front and middle incisors, and is shallow in the corner ones. Viewed in profile, the posterior edge of the lower corner incisor is well in advance of that of the upper jaw ; a fact which, generally, gives to the latter a hook-like prominence, from unequal wear. This downward projection is, often, filed level, in order to give the animal a false appearance of youth. The corner incisors, in this example, are fissured.

PLATE XVI.—EIGHT YEARS.



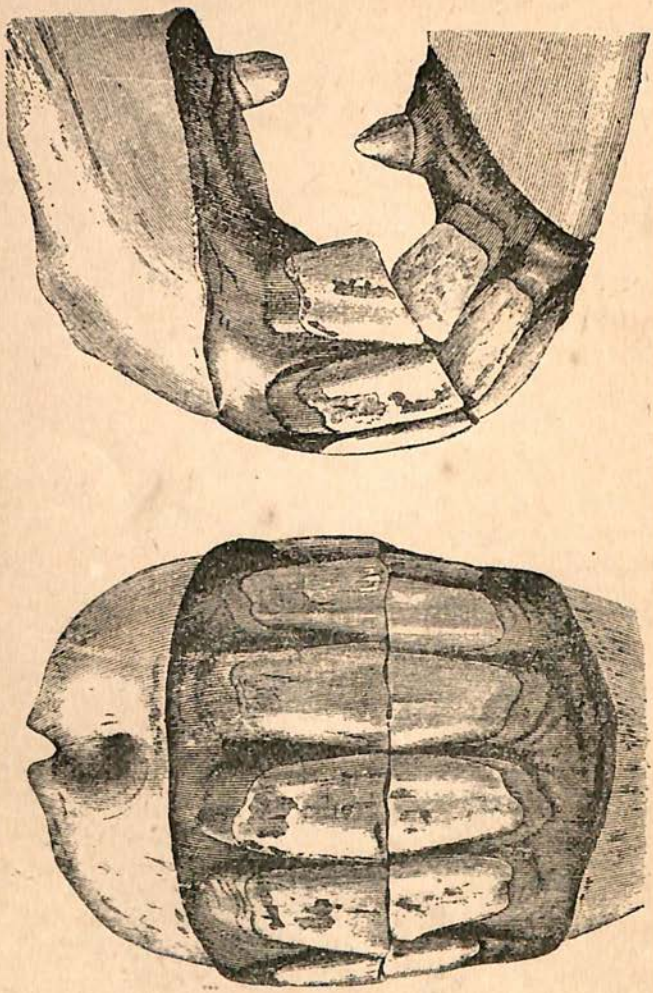


EIGHT YEARS.

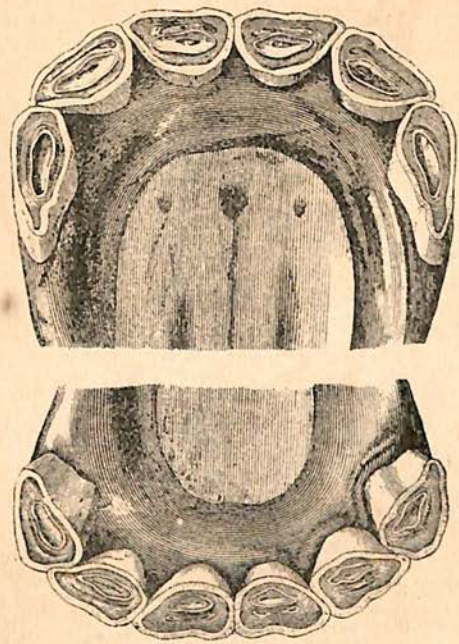


Looked at in profile, the lower incisors have, now, an oblique direction, as regards the jaw in which they are lodged. The cavities have disappeared out of all the lower incisors. The dental star is to be seen as a yellow transverse line, well marked in the front, but less plainly so in the others. The front incisors are beginning to assume a rounded form ; the middle ones are more or less oval ; and the corner ones are tending to become oval. The outer edges of the two front incisors in each jaw, are nearly in a straight line with each other.

PLATE XVII.—NINE YEARS.

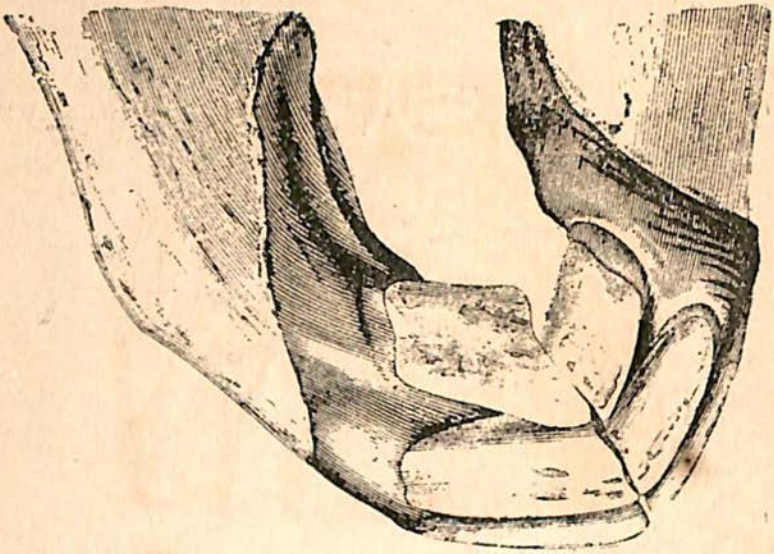


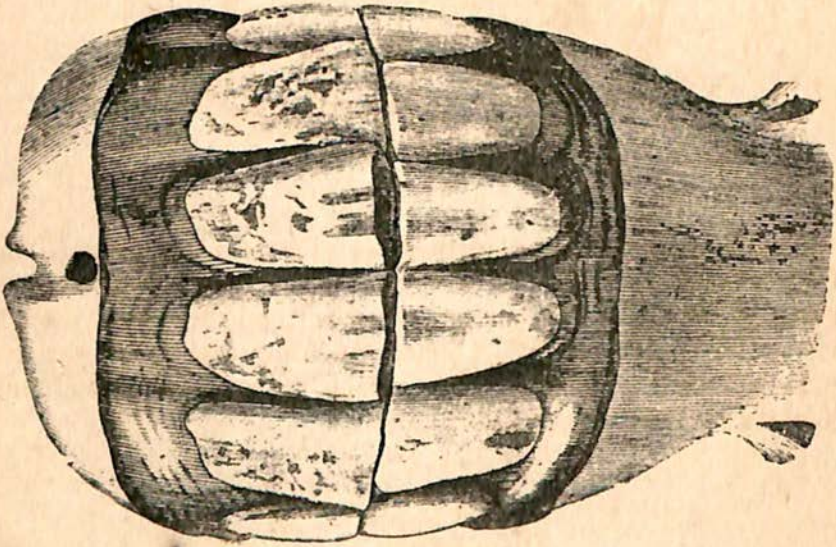
NINE YEARS.

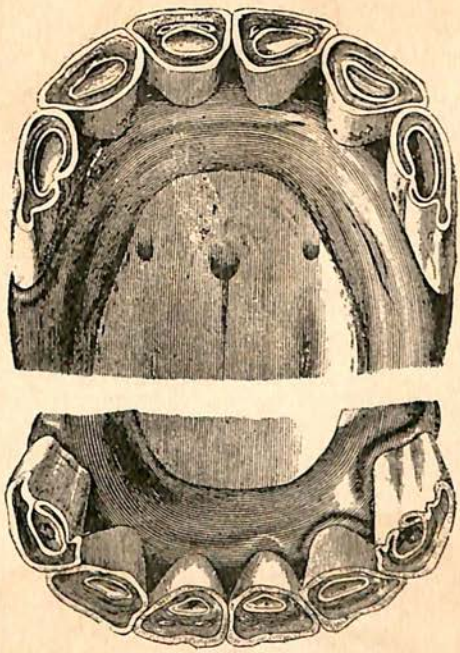


The "mark" has, generally, left the upper front incisors. The table of the lower front incisors is nearly round ; its central enamel is triangular in form ; and its dental star is well defined and placed in its centre. Before this age, the central enamel was broad, from side to side ; and narrow, from front to rear. The tables of the lower middle incisors tend to become triangular in shape ; while those of the corner ones are more or less oval.

PLATE XVIII.—TEN YEARS.

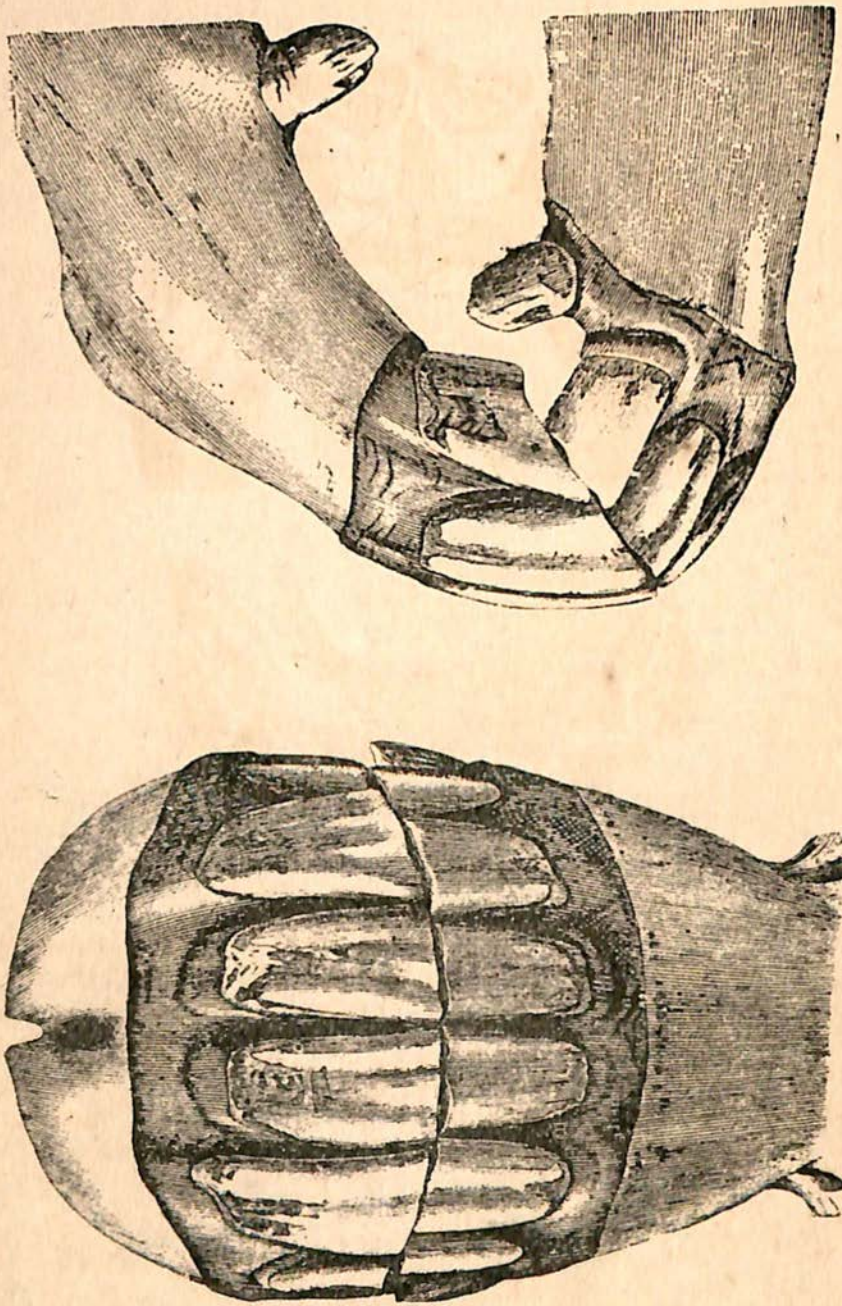




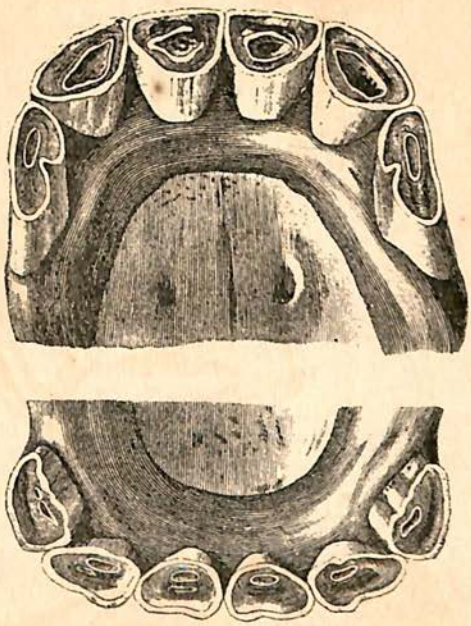


Viewed in profile, the teeth meet at a less angle than before. The tables of the front and middle incisors of the lower jaw assume a round, rather than an oval appearance; and their central enamel has a triangular shape. Looked at from the front, the front incisors have a more or less rectangular appearance; they being a good deal longer than they are broad.

PLATE XIX.—ELEVEN YEARS.

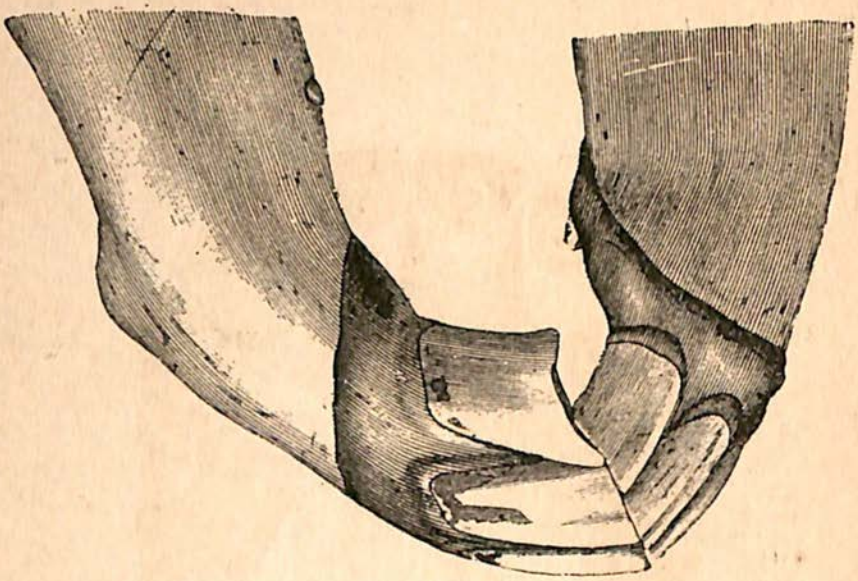


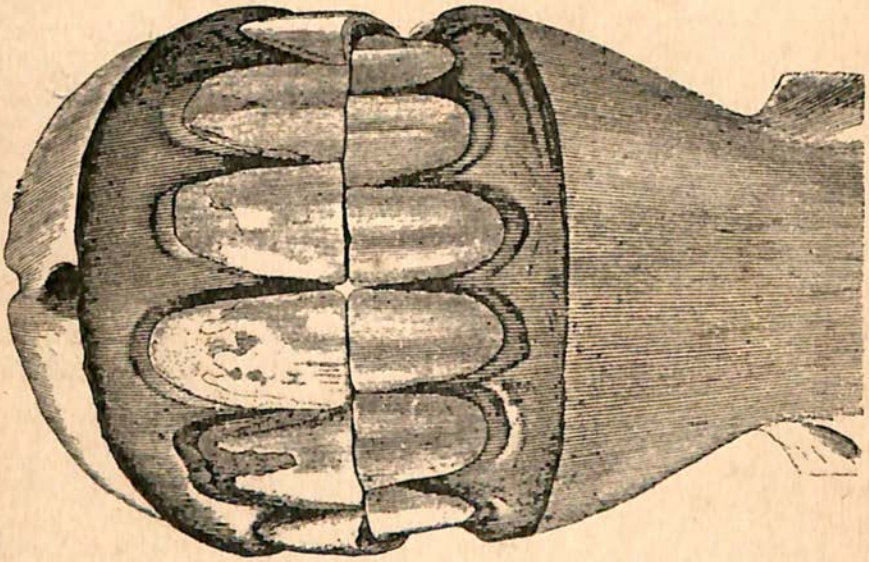
ELEVEN YEARS.



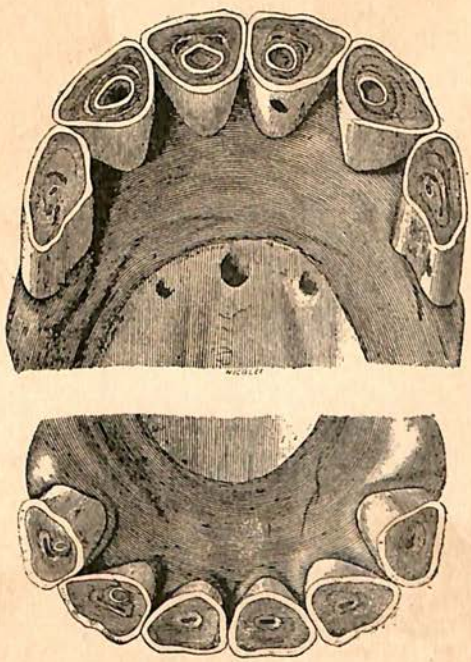
The central enamel of the lower incisors is small, round, and close to the posterior edges of the tables. The tables of the lower incisors are more or less round. The lower corner incisors come out square from the gum ; and are about as broad at their bases, as at their tables. The upper corner incisor is more obliquely placed than is the middle one adjoining it. In the lower jaw, the dental star is found in the middle of the tables.

PLATE XX.—THIRTEEN YEARS.



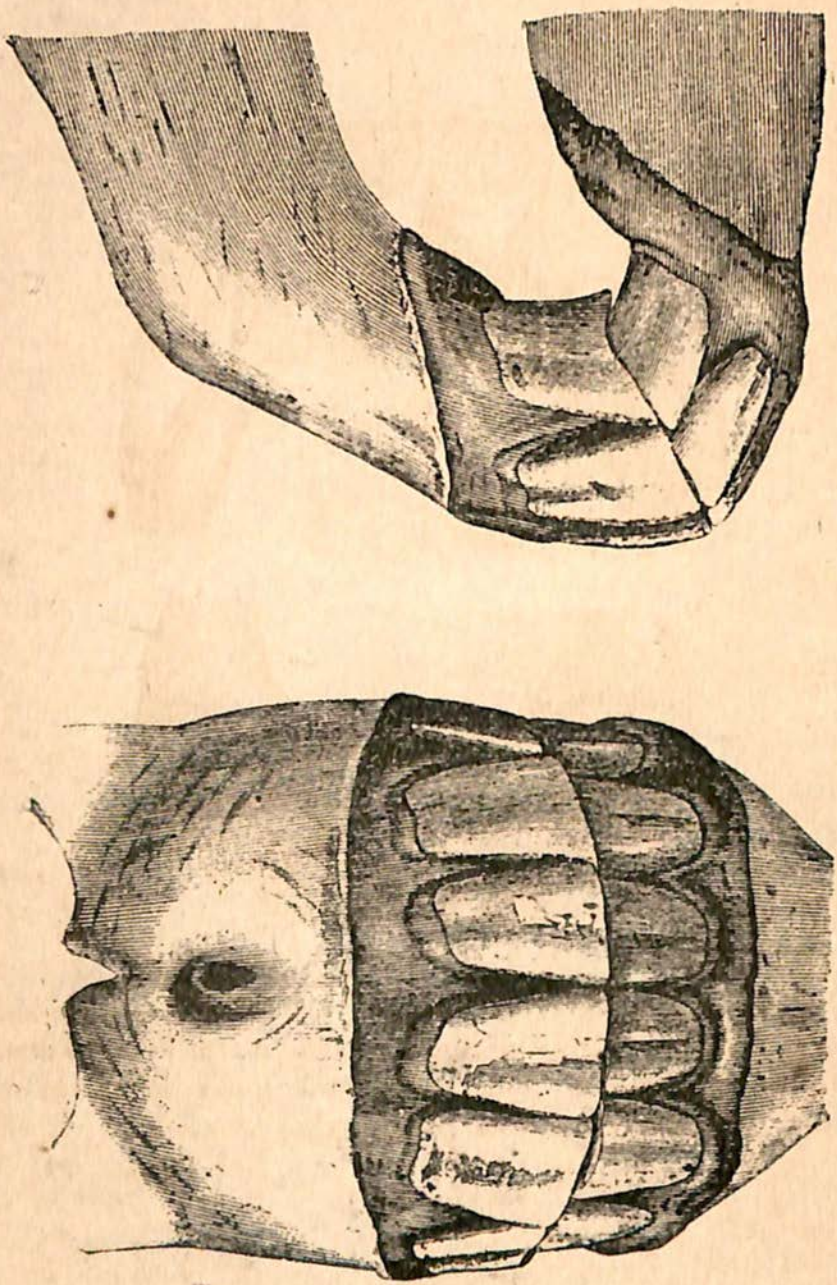


THIRTEEN YEARS.

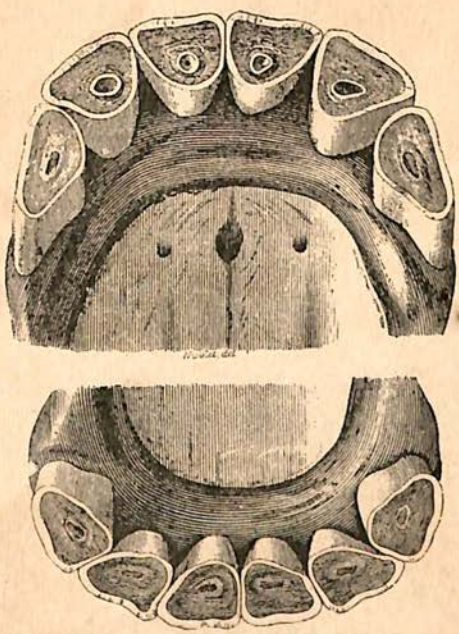


The central enamel of the upper incisors is of a round shape. It has, almost entirely, disappeared out of the lower incisors, in the centre of which, the dental star may be seen. The tables of the lower incisors are, more or less, triangular.

Plate XXI.—Fifteen Years.

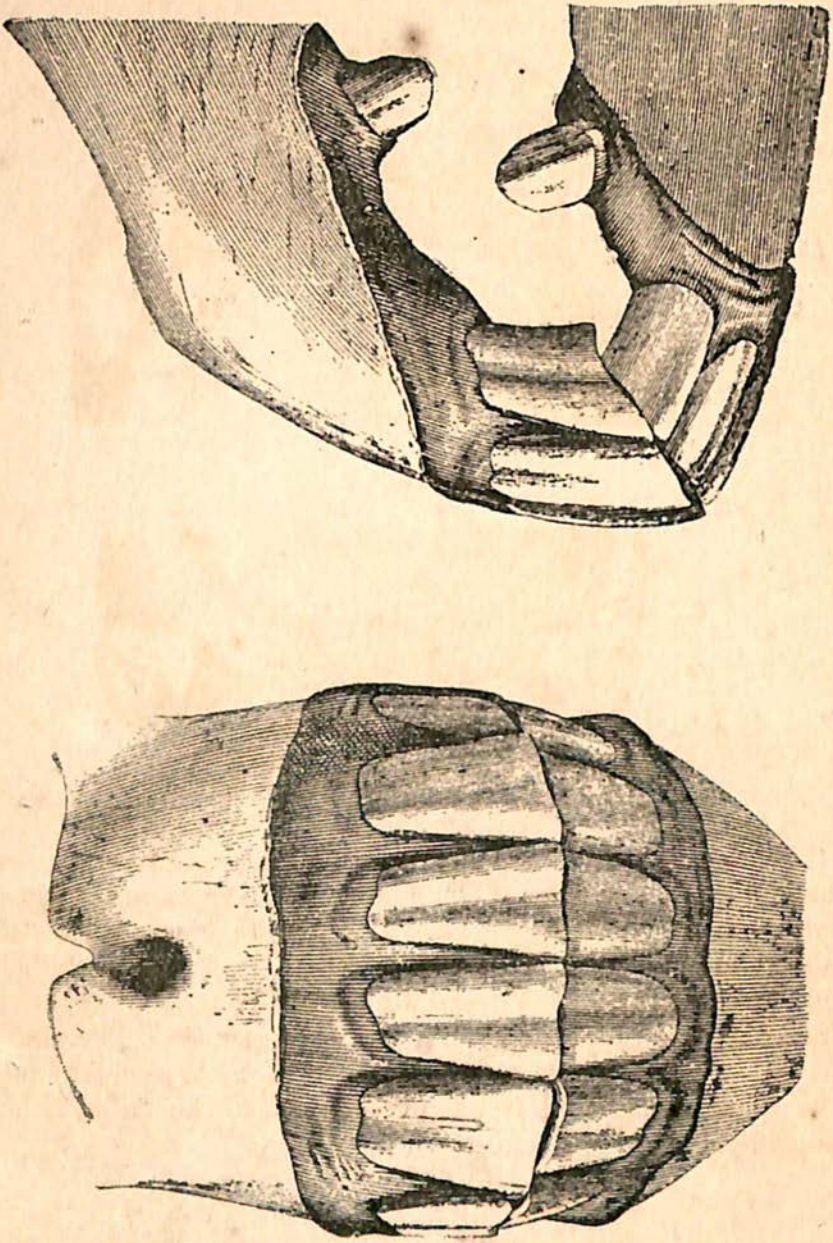


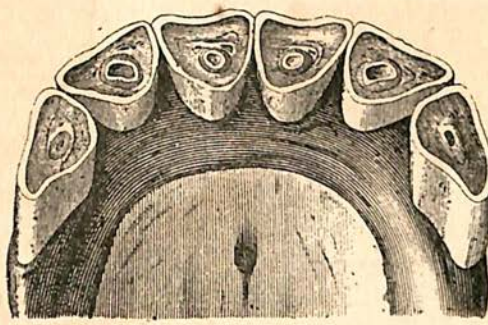
FIFTEEN YEARS.

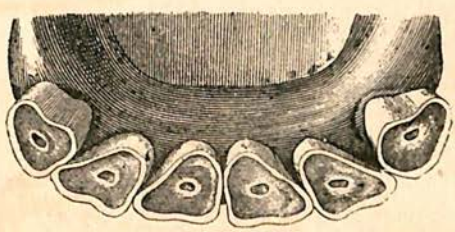


The upper and lower corner incisors are about the same length. On the tables of the lower incisors, the dental star appears distinct, and, more or less, round. The tables of the front incisors are nearly triangular; those of the middle ones are becoming so.

PLATE XXII.—SEVENTEEN YEARS.

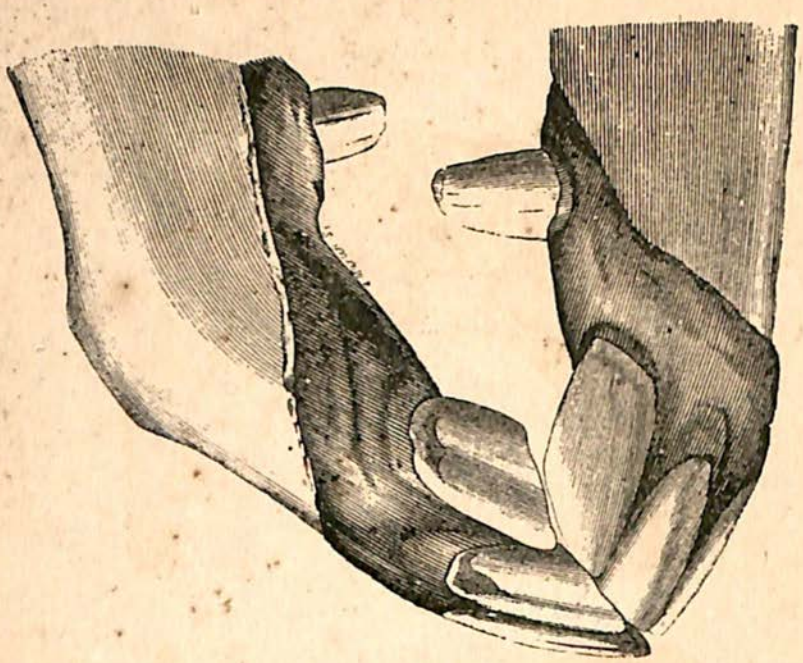


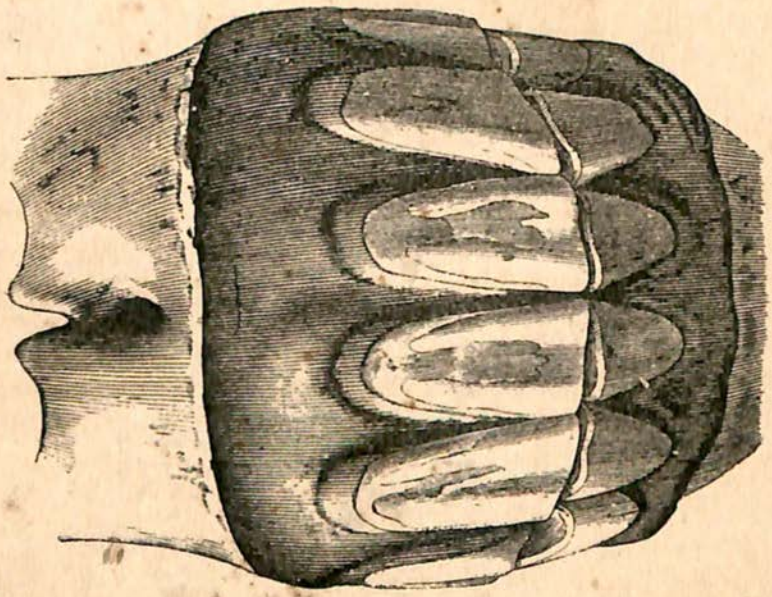


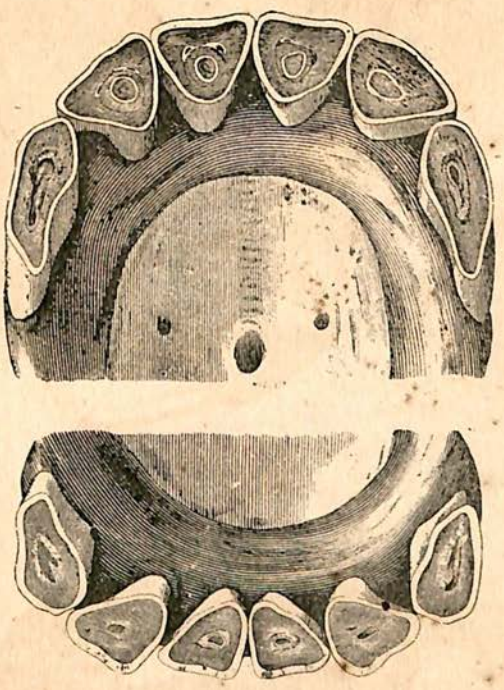


The upper and lower tables of the front and middle incisors have a triangular form. The dental star in those of the lower jaw, is round and centrally placed. The middle incisors, viewed from above downwards, incline slightly outwards, from each other, in a forward description. Viewed from the front, the upper corner incisors seem to converge in a forward direction. The teeth meet at such an acute angle, that, in order to examine easily the tables of the lower incisors, it is necessary to raise the animal's head up considerably.

PLATE XXIII.—TWENTY-ONE YEARS.

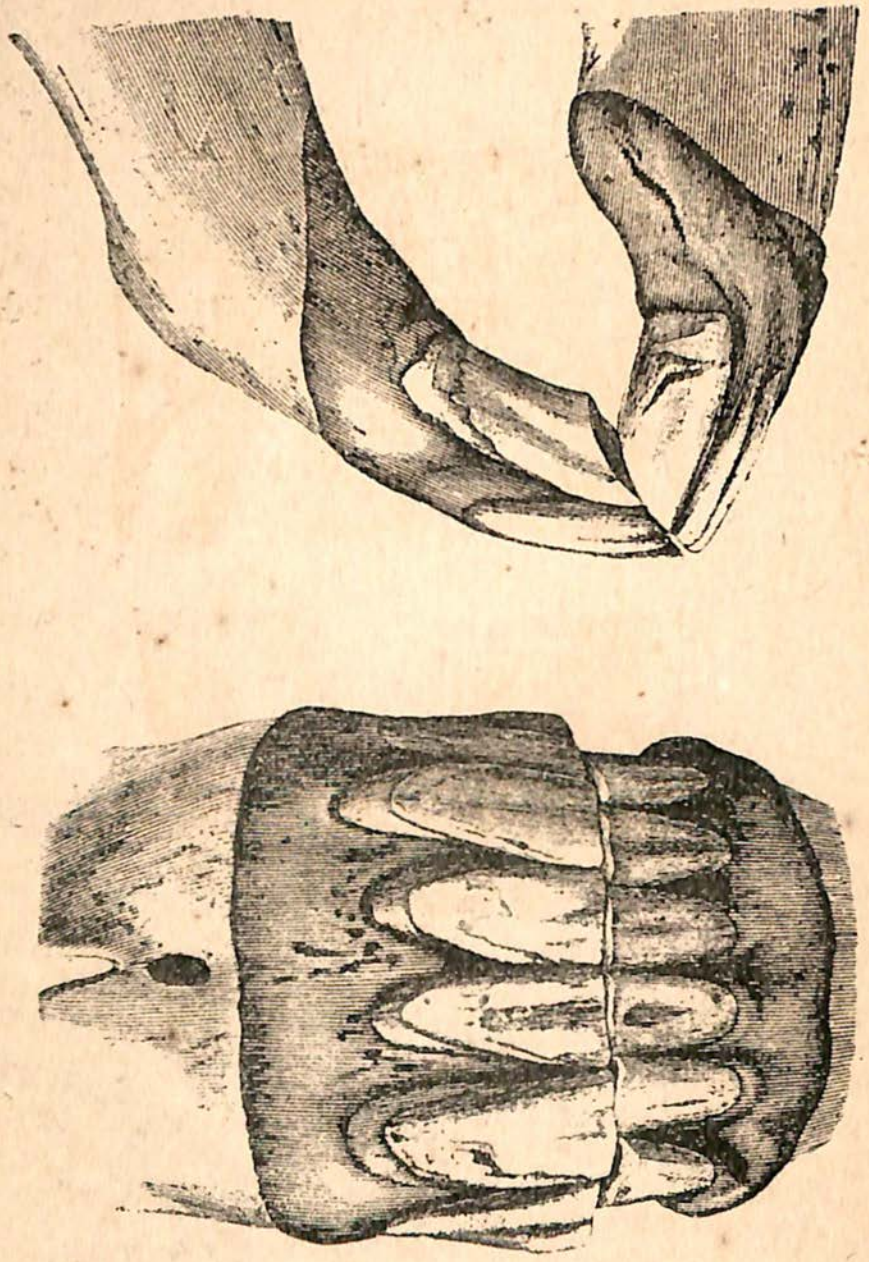


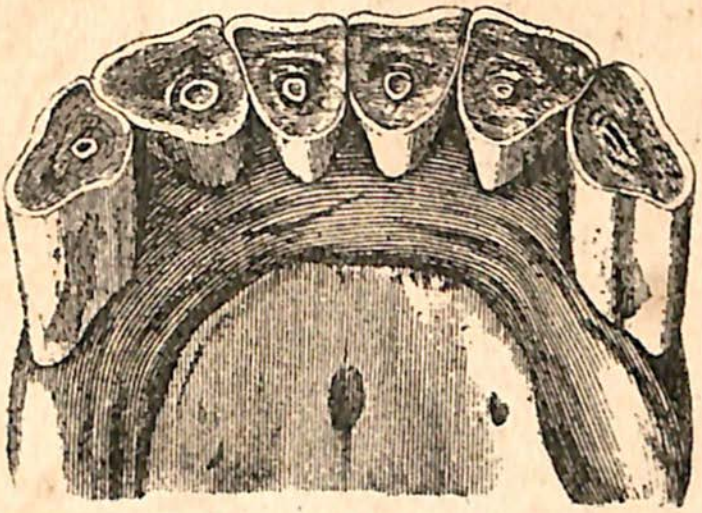




The front and middle incisors are broader lengthways than across; and, viewed from above downwards, appear to diverge outwards from each other, in a marked manner. Owing to the lower corner teeth becoming nearly horizontal, the hook-like projection which was, previously, to be seen on the posterior edge of the upper corner teeth, has, now, disappeared. Viewed from the front, the middle and corner incisors of the upper jaw appear to converge inwards.

PLATE XXIV.—THIRTY YEARS.





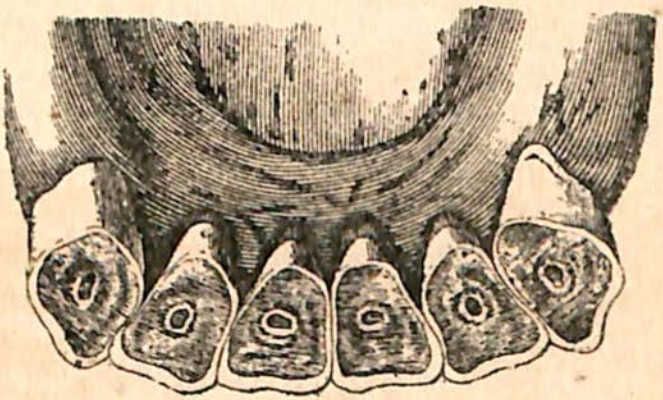
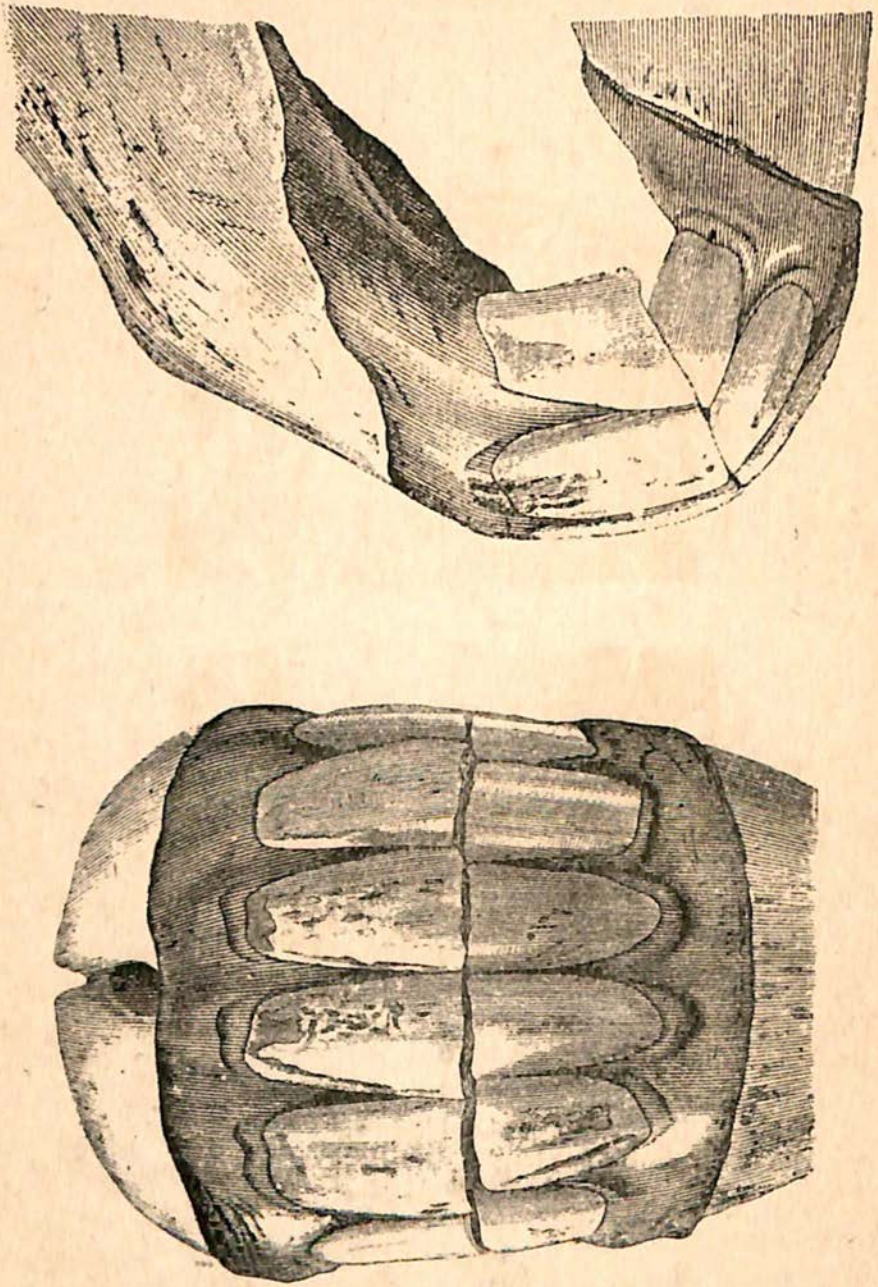
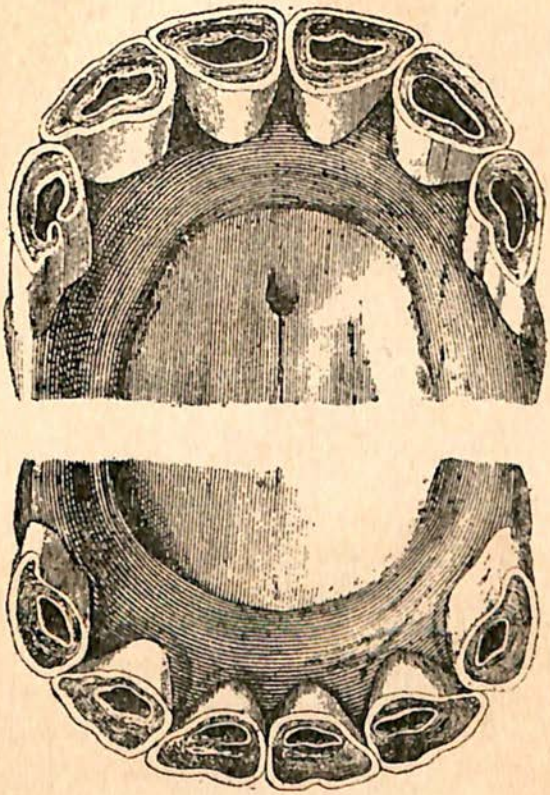


PLATE XXV.—NINE YEARS OLD, ABNORMAL.

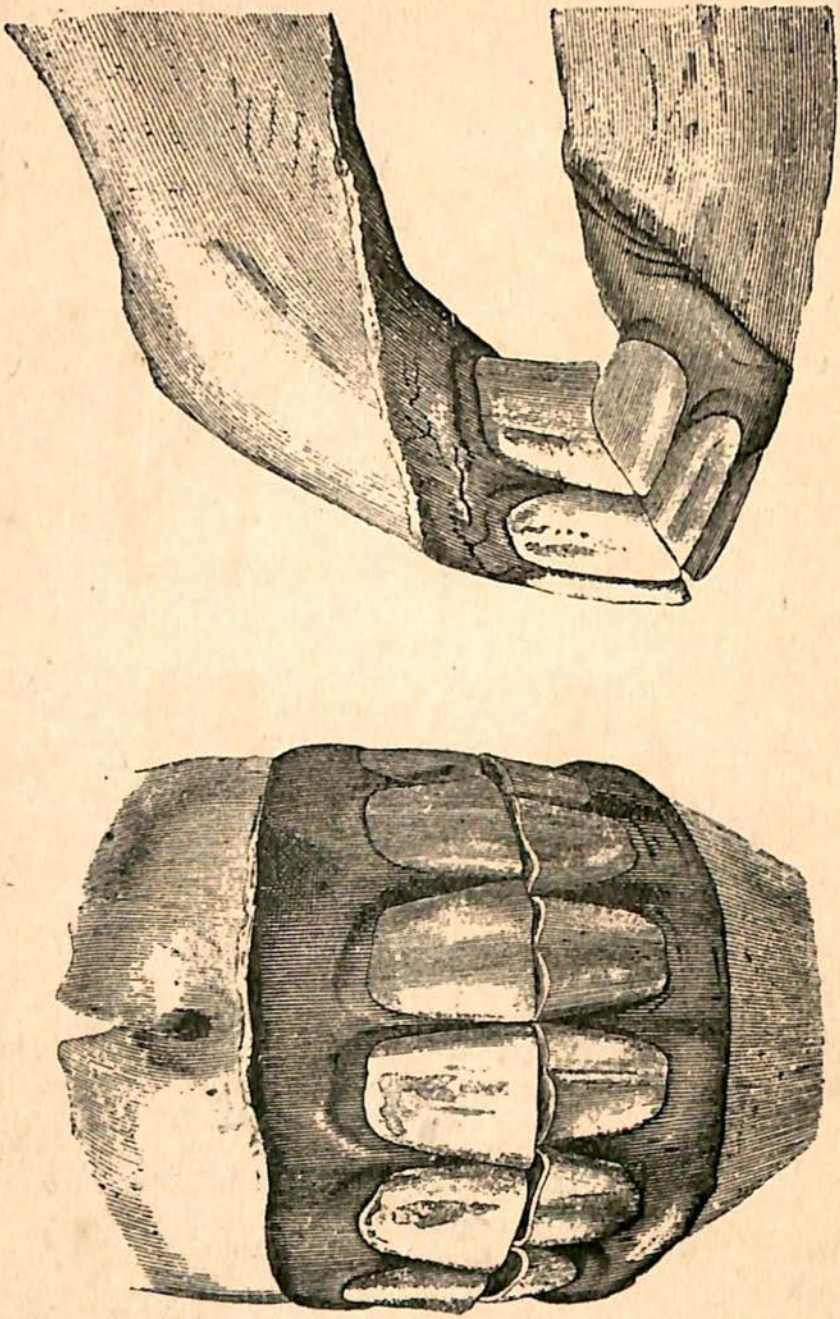


NINE YEARS OLD, ABNORMAL.

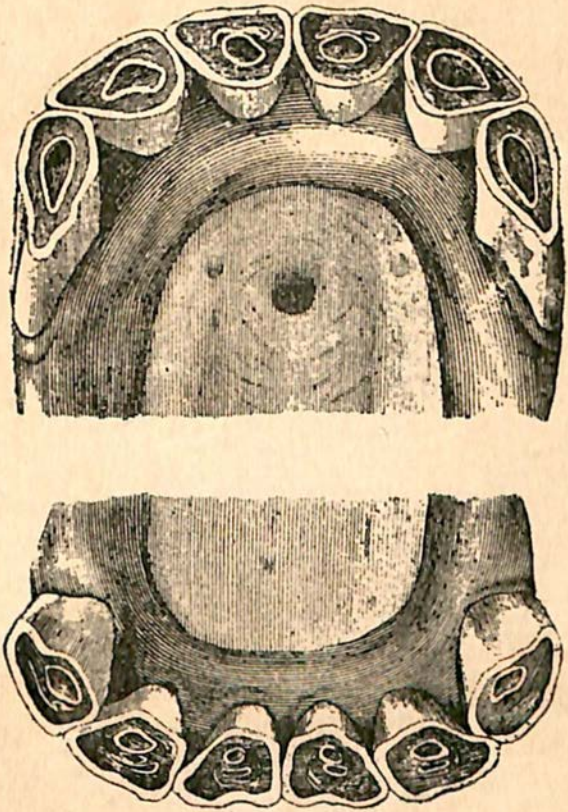


This is a nine-year-old mouth which has, abnormally, retained all its "marks."

PLATE XXVI.—FOURTEEN YEARS OLD, ABNORMAL.

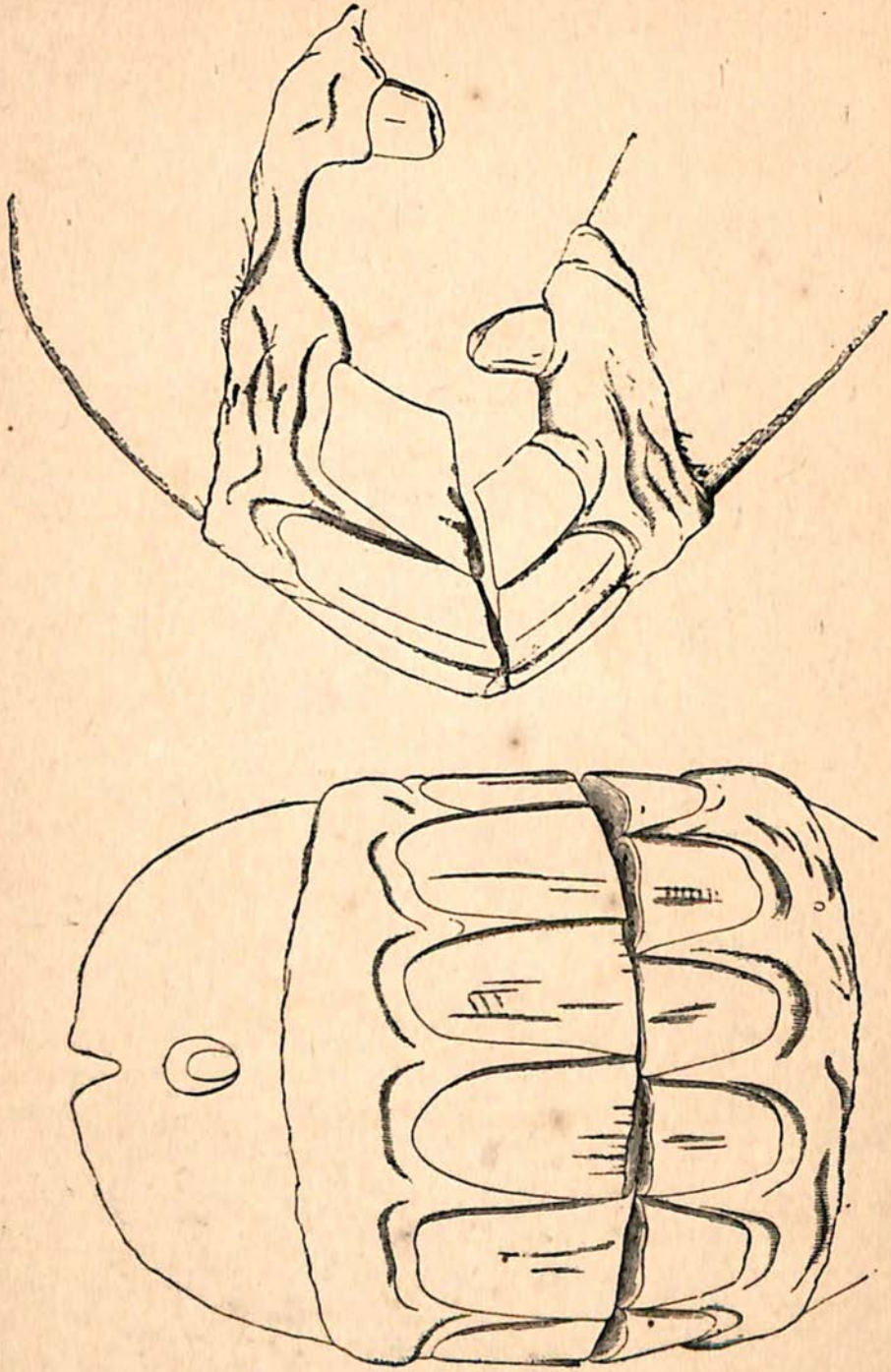


FOURTEEN YEARS OLD, ABNORMAL.

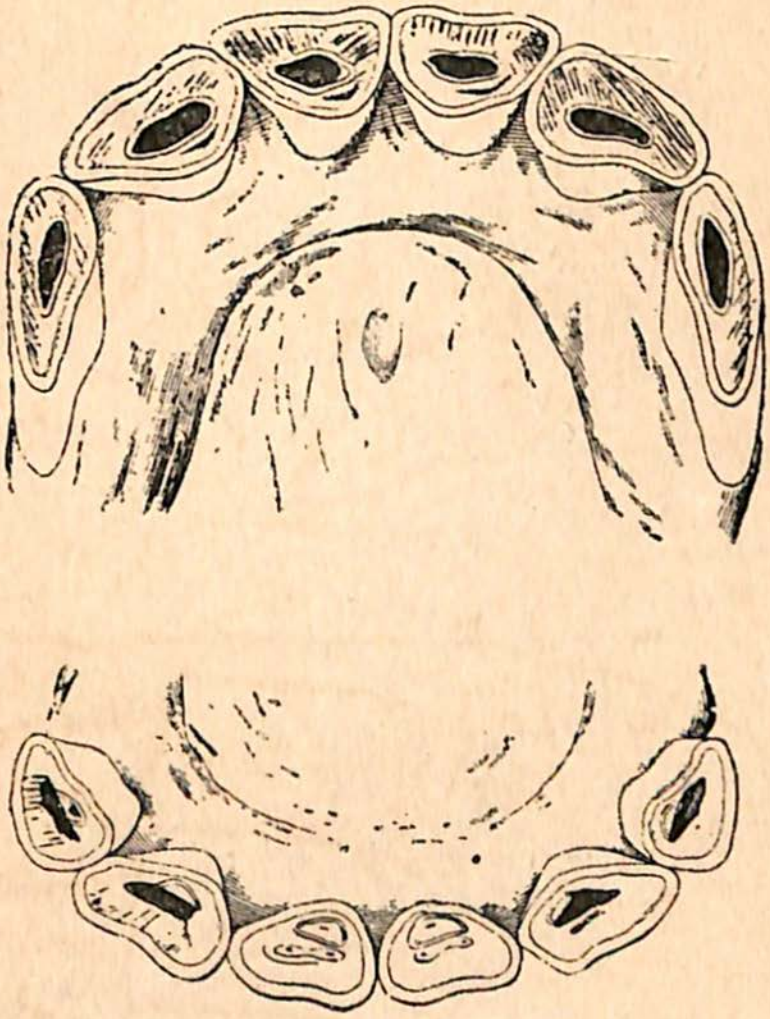


This plate represents a fourteen-year-old mouth, the teeth of which have, abnormally, retained the central enamel of their tables.

PLATE XXVII.—BISHOPED MOUTH.



BISHOPED MOUTH.



This plate represents a "bishoped" mouth.

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